Wetland Report (Revised 12/5/20) Proposed Hudson Logistics Center 43 Steele Road Hudson, NH

In response to comments received at the November 16, 2020 Conservation Commission Meeting the following report on the delineation and functional assessment of the wetlands on the proposed Hudson Logistics Center Site has been revised. The report now includes a wetland delineation data forms and additional evaluation for Ecological integrity as is required for the state wetland application. To avoid redundancy, photographs of the wetland have been excluded from this submittal, as has information on wildlife which has ben superseded by the comprehensive Wildlife Habitat Evaluation prepared by Lucas Environmental, LLC (11/9/20)

WETLAND DELINEATION

Various portions of the wetlands on this 273 acres property have been delineated and re-delineated several times by Gove Environmental Services personnel since 2005. For the current proposal, Brendan Quigley, NHCWS #249 re-flagged all wetland areas within the project area utilizing the following standards:

- US Army Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 (Jan 1987) AND Regional Supplement to Corps of Engineers Wetland Delineation Manual; Northcentral and Northeast Region, Version 2.0, January 2012.
- 2. Field Indicators of Hydric Soils in the United States, Version 8.2, 2018
- 3. National Wetland Plant List, Version 3.3 (2016).

Limited flagging along the access roads was completed in 2017 during early planning. The majority of the wetland delineation depicted on the *Hudson Logistics Center* plans was conducted in the fall 2019. All flagging was surveyed by Hayner Swanson, Inc., either in 2017 or recently in 2019/2020. ACOE wetland delineation data forms were prepared by request in in late November and early December of 2020. Data forms for the proposed impact areas are attached.

The property has several extensive areas of wetland in addition to the large areas of manicured lawn that dominate the property. Other than the relatively undisturbed bank of the Merrimack River, which defines the entire 5,000-foot (+/-) western boundary of the property, wetlands are characterized by a long history of alteration predating the regulation of freshwater wetlands. Prior to construction of the golf course, the property was largely cleared and actively managed for agriculture like most of the surrounding land. The most substantial changes occurred between 1952 and 1965 during which intensive aggregate extraction and large scale alteration of the terrain was carried out to create the two 18-hole courses that exist today. During this time, both naturally occurring wetlands and wetlands which had already been modified by agricultural use underwent further of modification by clearing, filling, channelization, and excavation. Ponds were excavated in upland areas and along the course of Limit Brook and other wetlands in order to create water features suitable for the for the golf course landscape and to provide water for irrigation. Several of these excavations created isolated circular ponds but many other areas of water remain hydrologically connected forming a complex arrangement

8 Continental Dr Unit H, Exeter, NH 03833-7507 Ph (603) 778 0644 / Fax (603) 778 0654 www.gesinc.biz info@gesinc.biz of wetlands, channels, and waterbodies in the eastern portion of the site. A figure is included in the attachments depicting the current wetlands on a 1952 aerial photo, clearly demonstrating the alterations carried out to create the golf course.

These wetlands fall into two main categories. One is a largely forested wetland system in the northeast of the site that is associated with an unnamed stream flowing off-site to the north, through a culvert under the portion of Circumferential Highway. Second is a more diverse system of forested, scrub-shrub, emergent, and open water wetlands directly or indirectly associated with Limit Brook. This perennial stream flows onto the property in the southeast corner, makes a single meander and leaves the site to the south. Both streams and all their associated wetlands are tributary to the Merrimack River. The excavated and isolated ponds throughout the golf course also clearly lie in the watershed of the Merrimack River but are not directly connected to each other or to the other wetlands. These ponds make up a third general category of resource on the property.

In order to provide more detailed descriptions and functional assessment of these wetlands they have been broken up into eight (8) evaluation areas based on connectivity and classification. The extent of each evaluation area and its reference number is depicted on the attached figure.

WETLAND FUNCTIONS & VALUES

A wetland function and value assessment was conducted on the six evaluation areas using the US Army Corps Highway Methodology guidelines. This methods considers 13 categories of function or value within a particular wetland area:

- 1. Groundwater recharge/discharge: This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. Recharge should relate to the potential for the wetland to contribute water to an aquifer. Discharge should relate to the potential for the wetland to serve as an area where ground water can be discharged to the surface.
- **2.** Floodflow Alteration: This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events.
- **3.** Fish and Shellfish Habitat: This function considers the effectiveness of seasonal or permanent water bodies associated with the wetland in question for fish and shell fish habitat.
- 4. Water Quality—Sediment/Toxicant/Pathogen Retention: This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants or pathogens.
- 5. Water Quality—Nutrient Removal/Retention/Transformation: This function relates to the effectiveness of the wetland to prevent adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers or estuaries.
- **6. Production Export:** This function relates to the effectiveness of the wetland to produce food or usable products for human, or other living organisms.
- **7. Sediment/Shoreline Stabilization:** This function relates to the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.
- 8. Wildlife Habitat: This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and or migrating species must be considered.

- **9. Recreation:** This value considers the effectiveness of the wetland and associated watercourses to provide recreational opportunities such as canoeing, boating, fishing, hunting and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland, whereas non-consumptive opportunities do not.
- **10. Educational/Scientific Value:** This value considers the effectiveness of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.
- **11. Uniqueness/Heritage:** This value relates to the effectiveness of the wetland or its associated water bodies to produce certain special values. Special values may include such things as archeological sites, unusual aesthetic quality, historical events, or unique plants, animals, or geological features.
- 12. Visual Quality/Aesthetics: This value relates to the visual and aesthetic qualities of the wetland.
- **13. Threatened or Endangered Species Habitat:** This value relates to the effectiveness of the wetland or associated water bodies to support threatened or endangered species

Functions are self-sustaining properties of wetlands, which exist in the absence of human involvement. Values refers to the benefits gained by human society from a given wetland or ecosystem and their inherit functions. Functions and values identified as "primary" have been determined to be significant features of the wetland being evaluated. This does not necessarily indicate the wetland performs these functions or values at a significant level in comparison to other wetlands in the region or even near the site. Each area was also evaluated for "Ecological Integrity", a concept specifically included in wetland functions and values as defined by state law. Rather than relating to a single function or value, ecological integrity considers the overall health and completeness of the wetland system in the context of the larger ecosystem. Generally speaking, a wetland in an untouched area of wilderness would have the highest ecological integrity while one in the middle of a busy city would have a very low ecological integrity. A discussion of each evaluation area on site and their functions and values is provided in the sections below. Data forms used in the evaluation are attached along with a key (Appendix A) to the qualifiers and considerations represented by the numbers in the Rational column.

Evaluation Area 1

This is the Merrimack River and its steep bank which forms the western boundary of the project site. This resource is classified as lower perennial riverine, with a permanently flooded, unconsolidated bottom (R2UBH)¹. The steep bank extending from the edge of the maintained golf course down to the river edge is forested with mature pine, oaks, and lesser amounts of birch and maple.

Functions/Values

The Merrimack River is a major New Hampshire river that supports numerous functions and values at a high level. *Wildlife habitat, Aesthetic* and *Recreational Value, Cultural Significance,* and *Shoreline Stabilization* are among the Primary Functions and values of the River in this area. Most relevant and significant for this property is likely the Shoreline Stabilization value. Rather than being supported by the river itself this value is supported by the forested high bank between the high-water mark and the top of the bank at the level of the golf course. This area serves to stabilize the shoreline contain peak flow during flood events.

¹ Cowardin, L. M., 1979. *Classification of Wetlands and Deepwater Habitats in the United States*. Washington, D.C.: U.S. Department of the Interior, Fish and Wildlife Service.

The Ecological Integrity of the river is diminished by the high amount of development in its watershed, dams, and historic loss of floodplain habitat. As a major river however, and with the improvements in water quality they have been realized in the past decades, the ecological integrity is relatively high compared to the other resources on this site and in the immediate area.

Evaluation Area 2

This evaluation area consists of a complex of wetlands occupying the northeast corner of the site. The predominant wetland type is forested wetland dominated by Red Maple with an understory of Witch Hazel, Highbush Blueberry, and Nannyberry. Royal Fern, Cinnamon Fern, and Sensitive Fern are common in the herbaceous layer. These wetlands are classified as deciduous, forested wetland, with saturated hydrology (PFO1B).

Water flows into the wetland from the surrounding uplands and from stormwater discharges associated with the adjacent development, including a large detention basin and drainage ditch. Several excavated ditches in the wetland and at the edge of the existing golf course direct water a small unnamed stream, which is depicted as perennial on the USGS map. Alterations and ditching in this area make the original path and extent of this stream unclear. Currently, a natural channel only exists within the wetland just south the highway before it flows off site through a culvert under the roadway. The stream ultimately drains to the Merrimack River approximately 1600' to the northwest of the site.

Functions/Values

The Primary functions of the wetlands in Evaluation Area 2 include *Flood Flow Alteration*, *Sediment/Toxicant Retention*, and *Nutrient Removal/Retention/Transformation*. Wildlife habitat and Production Export are also supported but have not been considered primary functions.

The Primary functions are derived from a combination of proximity to development and association with a stream that is tributary to the Merrimack River. Significant runoff from adjacent developed areas is directed to these wetlands numerous opportunities for sediment trapping and nutrient transformation before leaving the site. The constricted outlet and basin character of the lower portion of the wetland also provides some storage during periods of significant rainfall, therefore serving a flood follow alteration function. Both of these functions are somewhat diminished overall by the diches that have been excavated in the wetland and its position low in the watershed.

Wildlife habitat and production export function is derived from the variety of hard and soft mast producing species as well as the well-developed multi-canopy character of the forested wetland. These functions are limited, however, by the proximity of development and transportation infrastructure on all sides of the wetland.

The Ecological Integrity of this wetland is very low considering proximate development, disturbance, and the long culvert which effectively separates it from downstream areas including the Merrimack River.

Evaluation Area 3

This primarily forested wetland shares many characteristics with the lower part of Evaluation Area 2. It is a Red Maple dominated swamp, with an understory species including Winterberry, Highbush Blueberry, Royal Fern, Cinnamon Fern, and Skunk Cabbage. The long term hydrology of the wetland is likely saturated/seasonally flooded but it is currently flooded due to a beaver dam at its southern. The

classification of this wetland is therefore, deciduous, forested, wetland with a saturated and seasonally flooded hydrology that is influenced by beaver (PFO1Eb).

The forested wetland drains south through an excavated channel connecting it to Evaluation Area 5 and ultimately Limit Brook. The beaver dam that is currently maintaining a higher water level in the wetland is located at the begriming of this channel. Water levels in the channel vary seasonally, resembling a liner pond at higher water levels, and more of an emergent wetland at in the middle of the summer. Given its narrow shape and limited water depth, even at high water, this area has been classified as a Semi-permanently flooded excavated emergent wetland with a saturated scrub shrub edge (PEM2Fx/PSS1B). Emergent vegetation is dominated by a variety of sedges, rushes and wildflowers. Dominant species along its shrub edge include Silky dogwood, Meadowsweet, Gray Birch, and Glossy Buckthorn.

An area of hydric soils and wetland hydrology also extend from the forested portion of the wetland into the maintained turf of the adjacent golf course. This area has been evaluated separately as Evaluation Area 3.1 given its very different characteristics and function.

The Ecological Integrity of this wetland is very low considering proximate development and disturbance to the wetland itself.

Functions/Values

The primary functions of Evaluation Area 3 are *Nutrient Attenuation, Flood flow Alteration*, and *Wildlife Habitat*. Because of its emergent and forested characteristics that occur between managed golf course turf and areas of ponded water, Nutrient Attenuation is an important function of this area. Excess nutrients in runoff are taken up and held as vegetation rather than entering areas of open water. The restricted outlet at the beginning of the narrow channel, even in the absence of the current beaver dam, increases retention time, supporting nutrient transformation. Heavy algae growth in the currently flooded wetland provides strong evidence that the wetland does carry out this function. This storage capacity created by the restricted outlet also supports flood flow alteration function. Wildlife habitat and Production Export are present in the form of numerous soft-mast producing species in the scrubshrub stratum that are likely utilized by numerous song birds and small mammals. The shallow pond-like character of the connecting ditch, as well as the flooded forested wetland are suitable to amphibians and turtles. Vernal pool breeding activity, though very modest, was in fact noted in the forested wetland during the spring of 2020. This is discussed further in the Vernal Pool section.

Evaluation Area 3.1

The wetland being evaluated in this area consists maintained lawn area extending between the forested wetland in Area 3 to one of the ponds in Area 5. Both hydric soils and signs of wetland hydrology were documented in this area, and although vegetation consists of golf course turf, this is an artificially maintained condition that would cease if mowing ended. This wetland has been designated as saturated wet meadow with a "farmed" modifier (PEM2Bf). This area may have represented the extent of wetland in this area predating large scale alteration of the landscape or could have developed due to these alterations and the new drainage patterns that it created.

Functions/Values

Though technically qualifying as wetlands, these areas of maintained lawn hold very little, if any, functional wetland value. Other than intermittent ponding, there is no surface water, no wildlife

habitat, or unique or interesting features. The primary function of this wetland is limited *Groundwater Discharge*.

Ecological integrity of this wetland is virtually nonexistent due to the fact that no natural vegetation has exists. It only qualifies as a wetland in terms of its hydrology and hydric sioils.

Evaluation Area 4

This area is located in the eastern portion of the project site just south of Evaluation Area 2 but separated by the access driveway for Parcel 234/4, currently occupied by Mercury Systems. The Evaluation Area 4 consists of forested, Red Maple dominated wetland similar to that described in Evaluation Areas 2 and 3 but with stable saturated hydrology (PFO1B). These forested wetlands drain south toward Limit Brook but are not directly associated with the waterway.

Functions/Values

The Primary functions of the wetlands in Evaluation Area 4 include *Flood Flow Alteration, Sediment/Toxicant Retention, and Nutrient Removal/Retention/Transformation.* Wildlife habitat and Production Export, and Groundwater Discharge are also supported but have not been considered primary functions.

Evaluation Area 5

This evaluation area consists of wetlands associated with Limit Brook which is a perennial tributary to the Merrimack River. The stream enters the site from the east first flowing through a complex of relatively natural emergent and scrub shrub wetlands bordered by areas of golf course turf. These wetlands are areas dominated by cattail, numerous sedges, rushes, Silky Dogwood, and Arrow-Wood. These wetlands are classified as PEM1E/PSS1E. The stream then flows into two interconnected ponds that were excavated during construction of the golf course as water features. Their water level is maintained by a small dam located adjacent to Steele Road. These ponds are too small and shallow to be classified as lacustrine features so they are classified under the Palustrine system as areas of Unconsolidated Bottom, in this case also excavated and impounded (PUBHxh). The ponds have fringe of scrub-shrub and emergent saturated wetlands (PEM2/PSS1E) but are otherwise surrounded by golf-course. Dominant species in the fringe wetland areas include Speckled Alder, Purple Loosestrife, Reed Canary Grass, and numerous other meadow species such as goldenrods and asters.

Functions/Values

The primary functions of the wetlands in Evaluation Area 5 are *Wildlife Habitat, Nutrient Attenuation, and Flood flow Alteration*. The variety of wetland types present in this wetland complex, in association with a perennial stream and ponds, supports a number wildlife habitat functions. These range from the presence of numerous soft-mast producing species in the scrub-shrub stratum which provides foraging habitat for numerous songbirds and small mammals, to the ponds, typically suitable for warm water fish species, amphibians, and turtles. Though several barriers exist to free travel along the Limit Brook corridor it likely does provide access between the habitats on this site and a large utility right-of-way located to the south which extends do to the Merrimack River.

Because of its association with a golf course turf and a perennial stream, Nutrient Attenuation is an important function of this area. Excess nutrients in runoff are taken up and held as vegetation rather than entering areas of open water. Additionally, the broad nature of the areas on either side of the stream provide ample floodwater storage during major rain events and during spring snowmelt. This

wetland complex also has several secondary functions including Shoreline Stabilization and Production Export.

Despite the proximate development and disturbance, the ecological integrity of this wetland is moderate due to its association with Limit Brook and connection to a number of other wetland types.

Evaluation Area 6

This area is the continued flow path of Limit Brook extending from the south side of Steele Road to the southeastern property boundary. It has been evaluated separately since these wetlands also lie within the 100-year floodplain of Limit Brook and therefore qualify as a Priority Resource Area. It consists of a shallow pond, an area of ditched wet meadow, and a more natural emergent and scrub-scrub shrub wetland extending to the southern property line. The excavated pond is similar to those in Area 5 but appears shallower and more likely to have a vegetation in the water. It has therefore been classified as an area of Palustrine Aquatic Bed wetland (PABHxh). A narrow ditched channel extends from a pipe at the downstream end of the pond through maintained turf. Dominant species in the fringe wetland around the pond and this ditched wet meadow are consistent with Area 5 although shrubs are largely absent so they have been classified as saturated emergent (PEM2B). The final portion of wetland in the evaluation area is a largely natural emergent and scrub-scrub shrub wetland through which Limit Brook flows unimpeded off site to the south. This wetland is similar to the wetland in Area 4 where Limit Brook enters the site. It is numerous sedges, rushes, ferns, Silky Dogwood, and Arrow-Wood. This wetland is classified as PEM1E/PSS1E.

Functions/Values

The primary functions of the wetlands in Evaluation Area 6 are, *Flood flow Alteration, Nutrient Attenuation*, and *Wildlife Habitat*. This area lies within the mapped 100 year floodplain associated with Limit Brook so the pond and wetland areas are clearly important flood storage areas. The pond, with its constricted outlet and narrow, densely vegetated swale, act as an effective water quality treatment feature. Together they are able to intercept and treat runoff from the expanse of managed turf surrounding them prior to releasing it to more natural wetlands downstream. These more natural areas hold the greater wildlife value, with numerous food sources, cover, and connectivity to off-site habitat areas. This wetland complex also supports Shoreline Stabilization and Production Export.

Despite the proximate development and disturbance, the ecological integrity of this wetland is moderate. Though several crossings exist, the flow of Limit Brook is relatively intact as are several adjacent wetland resources and floodplain.

Evaluation Area 7

This Evaluation Area consists of the 4 isolated excavated ponds located in the throughout the course. Like the ponds discussed in Areas 5 and 6, these ponds were excavated during construction of the golf course to create water features. Unlike the ponds along the course of Limit Brook however, these ponds are hydrologically isolated features. Only a very narrow fringe of emergent wetland exists around their nearly circular perimeter and this is subject to regular mowing. Species in this fringe wetland include Purple Loosestrife, Reed Canary Grass, Soft Rush, and common meadow species such as asters and goldenrods. The ponds have been classified as permanently flooded unconsolidated bottom wetlands created by excavation (PUBHx).

Functions/Values

The function and value of these ponds is limited by their small size, isolated hydrology, and setting surrounded by managed golf course turf. Their primary function is *Groundwater Recharge/Discharge*. A secondary function is very limited Wildlife Habitat for species such as eastern painted turtles, green frogs, mallards and Canada geese which have been observed utilizing the ponds and their margins.

Evaluation Area 8

This is a small, isolated depression located at the edge of a fairway in the southwest corner of the project site. This area may have been created or adapted to function as a detention pond as there are several pipes entering the area. Soil are sandy and it does not appear to hold water for significant periods of time but also does not have an obvious outlet. Vegetation, while sparse, includes sensitive fern, Purple Loosestrife, and various weedy species. This area may be classified as an intermittently flooded, excavated, wet meadow (PEM2Jx)

Functions/Values

The primary functions of this wetland are *Groundwater Recharge* and *Sediment/Toxicant Retention*. Both these functions are derived from the fact that the area receives runoff from the surrounding golf course and in infiltrates it through a sandy substrate. This provides groundwater recharge and prevents sediment and from entering the Merrimack River which lies close by.

These isolated ponds play a very limited role on the overall ecosystem due to their location on an active golf course. Their Ecological Integrity is therefore very low.

VERNAL POOLS

A vernal pool investigation was conducted in the spring of 2020. Wetland areas were investigated for the presence of suitable ponding and evidence of vernal pool breeding activity, primarily through counting of egg masses. The topography of the site and character of the wetlands did not suggest extensive vernal pool habitat. The permanently flooded ponds on the site likely support fish populations and certainly do support large populations of predatory frogs. These type of areas a very rarely suitable for vernal pool breeding activity and none was identified in these areas. The majority of the forested and emergent wetlands on the site lack depressions with adequate depth and seasonal hydrology.

Only one area of vernal pool breeding was noted on the property. This was located in the north end of the forested wetland that crosses through the Mercury Systems property. Its location is depicted on the Wetland Overview Figure and on the plans. Wood Frog chorusing was heard throughout the wetland which was flooded on March 26 but no egg mases were found. A total of 14 wood frog egg masses were identified in a single area at the northern end of this wetland during a follow up survey of on April 4, 2020.

The current flooding of this wetland is being maintained by a beaver dam at its outlet so it is not clear that this entire forested wetland represents suitable stable habitat for vernal pool breeding. Without the impoundment the wetland would only be saturated, as can be seen in the 2012 photo that is used in the Wetland Resources Overview figure contained in the Figures Section. The area where egg masses were identified may in fact be the only location where a suitable pool exists without the beaver impoundment.

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ATTACHMENTS

- 1. 1952 Aerial Photo/Wetlands
- 2. Wetland Evaluation Areas Figure
- 3. ACOE Wetland Delineation Data Forms
- 4. Function and Value Data Forms







Project/Site: Hudson Logistics Center	City/County: Hudson Sampling Date: 12/2/20
Applicant/Owner: Hillwood Development	State: NH Sampling Point: 1-1_UPL
Investigator(s): Brendan Quigley, Gove Environmental Services	Section, Township, Range:
Landform (hillside, terrace, etc.): Lower Merrimack River Valley	.ocal relief (concave, convex, none): convex Slope %:
Subregion (LRR or MLRA): LRR R Lat: see map	Long: Datum:
Soil Map Unit Name:	NWI classification: PFO1B
Are climatic / hydrologic conditions on the site typical for this time of ye	ar? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly of	disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrologynaturally prof	olematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X If yes, optional Wetland Site ID: Impact Area 1				
Hydric Soil Present?	Yes	No X					
Wetland Hydrology Present?	Yes	No X					
Remarks: (Explain alternative procedures here or in a separate report.)							

Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) Water-Stained Leaves (B9) Drainage Patterns (B10) High Water Table (A2) Aquatic Fauna (B13) Moss Trim Lines (B16) Saturation (A3) Marl Deposits (B15) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
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Sparsely Vegetated Concave Surface (B8) FAC-Neutral Test (D5)
Field Observations:
Surface Water Present? Yes No X Depth (inches):
Water Table Present? Yes No X Depth (inches):
Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No X
(includes capillary fringe)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:

Sampling Point: 1-1_UPL

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: <u>30'r</u>)	% Cover	Species?	Status	Dominance Test worksheet:
1. Pinus strobus	60	Yes	FACU	Number of Dominant Species
2. Quercus rubra	15	No	FACU	That Are OBL, FACW, or FAC: 1 (A)
3. Acer rubrum 4.	15	No	FAC	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
5.				Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)
7.				Prevalence Index worksheet:
	90	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stra <u>tum</u> (Plot size: 15'r)		•		OBL species 0 x 1 = 0
1. Corylus cornuta	10	Yes	FACU	FACW species 5 $x 2 = 10$
2. Prunus serotina	10	Yes	FACU	FAC species 15 x 3 = 45
3.				FACU species 95 x 4 = 380
4.				UPL species $0 x 5 = 0$
5.				Column Totals: 115 (A) 435 (B)
6				Prevalence Index = $B/A = 3.78$
7				Hydrophytic Vegetation Indicators:
/··	20	-Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Harh Stratum (Plot size: 5'r)		-1010100000		2 - Dominance Test is 550%
	Б	Voc		
	5	162	FAGW	$\frac{3 - \text{Plevalence index is } > 3.0}{4 - \text{Marchalogical Adaptations}^1 (\text{Provide supporting})}$
2				data in Remarks or on a separate sheet)
3				
4	. <u></u>			Problematic Hydrophytic Vegetation' (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6			·	be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All berbaceous (non-woody) plants, regardless
	5	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Weady vines $= \Delta II$ woody vines greater than 3.28 ft in
1.				height.
2.		,		
3.				Hydrophytic
4.				Vegetation Present? Yes No X
		=Total Cover		
Remarks: (Include photo numbers here or on a sepa	rate sheet.)			
Nellians. (include proto numbers note of on a copa	Tate Shoot.			

SOIL	
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Profile Des	cription: (Describe	to the dep	oth needed to doc	ument t	he indica	ator or co	onfirm the absence of indicators.)		
Depth	Matrix		Redo	x Featur	res				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Re	emarks	
0-9	10yr 3/2	100					Sandy		
9-18	10yr 5/3	95	10yr 5/6	5	С	М	Sandy		
		·							
		· <u> </u>							
	·								
		·							
		·							
1		· <u> </u>				. <u></u>			
'Type: C=C	oncentration, D=Dep	letion, RM	=Reduced Matrix, N	MS=Mas	ked Sand	Grains.	² Location: PL=Pore Lining, M	l=Matrix.	
			Dahayakua Dala	Surfa	aa (CQ) (I				
Histosol	(A1)			ow Suna	ice (58) (I	LKK K,		, L, WILKA 149B)	
	pipedon (A2)		MLRA 149B	5) . (0-			Coast Prairie Redox (A16	$(LRR \mathbf{K}, L, R)$	
Black H	istic (A3)		Thin Dark Surf	face (S9) (LRR R	, MLRA 1	149B) 5 cm Mucky Peat or Peat	(S3) (LRR K, L, R)	
Hydroge	en Sulfide (A4)		High Chroma	Sands (S	511) (LRF	R K, L)	Polyvalue Below Surface	(S8) (LRR K, L)	
Stratifie	d Layers (A5)		Loamy Mucky	Mineral	(F1) (LR	R K, L)	Thin Dark Surface (S9) (L	_RR K, L)	
Deplete	d Below Dark Surface	e (A11)	Loamy Gleyed	l Matrix ((F2)		Iron-Manganese Masses	(F12) (LRR K, L, R)	
Thick Da	ark Surface (A12)		Depleted Matri	ix (F3)			Piedmont Floodplain Soils (F19) (MLRA 149B)		
Sandy N	/lucky Mineral (S1)		Redox Dark Su	urface (F	-6)		Mesic Spodic (TA6) (MLF	RA 144A, 145, 149B)	
Sandy G	Gleyed Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Parent Material (F21)		
Sandy F	Redox (S5)		Redox Depres	sions (F	8)		Verv Shallow Dark Surfac	ce (F22)	
Stripped	Matrix (S6)		Marl (F10) (LR	R K. L)	- /		Other (Explain in Remark	s)	
Dark Su	irface (S7)			, _,				-,	
³ Indicators o	of hydrophytic vegeta	tion and w	etland hydrology m	ust be p	resent, ur	nless dist	urbed or problematic.		
Type.	Layer (if observed):								
Denth (i	nches).						Hydric Soil Present? Yes	No X	
Demerilier									
Remarks: This data for	rm is revised from No	orthcontrol	and Northeast Reg	uional Su	Innlemen	t Version	2.0 to include the NRCS Field Indicato	re of Hydric Soile	
Version 7.0	2015 Errata (http://		isda gov/Internet/E	SE DO	CUMENT	S/nrcs14	2n2 (051293 docx)	is of Hydric Solis,	
,									

Project/Site: Hudson Logistics Ce	enter	(City/County: Hudson			Sampling Date: 12/2/20
Applicant/Owner: Hillwood De	velopment			State:	NH	Sampling Point: 1-1_WET
Investigator(s): Brendan Quigley,	Gove Environmental Ser	rvices	Section, Townsh	hip, Range:		
Landform (hillside, terrace, etc.):	Lower Merrimack River	r Valley Local re	lief (concave, convex, no	one): <u>concav</u>	е	Slope %:
Subregion (LRR or MLRA): LRR	R Lat: s	see map	Long:			Datum:
Soil Map Unit Name:				NWI classifi	ication:	PFO1B
Are climatic / hydrologic conditions	on the site typical for thi	is time of year?	Yes	No	(lf no, e	explain in Remarks.)
Are Vegetation, Soil	, or Hydrologys	significantly disturbe	d? Are "Normal C	Circumstance	s" prese	ent? Yes X No
Are Vegetation, Soil	, or Hydrologyn	naturally problemation	c? (If needed, ex	plain any ans	swers in	Remarks.)
SUMMARY OF FINDINGS -	- Attach site map s	showing samp	ling point location	s, transec	ts, im	portant features, etc.
Hydrophytic Vegetation Present?	Yes X	No	Is the Sampled Area			
Hydric Soil Present?	Yes X	No	within a Wetland?	Yes	Х	No
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland	d Site ID: Ir	mpact A	vrea 1

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland Hydrology Indicators:			Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is requir	Surface Soil Cracks (B6)		
Surface Water (A1)	Water-Stained Leaves (B9)		Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lines (B16)
X Saturation (A3)	Marl Deposits (B15)		Dry-Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Ro	oots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils	s (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquitard (D3)
X Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)		Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B	8)		FAC-Neutral Test (D5)
Field Observations:			
Surface Water Present? Yes	No X Depth (inches):		
Water Table Breacht? Veg V			
	No Deptil (inches). 15		
Saturation Present? Yes X	No Depth (inches): 10	Wetlan	d Hydrology Present? Yes X No
Saturation Present? Yes X (includes capillary fringe)	No Depth (inches): 10	Wetlan	d Hydrology Present? Yes X No
Value Fable Fresent? Fes X Saturation Present? Yes X (includes capillary fringe) Describe Recorded Data (stream gauge, mo	No Depth (inches): 13 No Depth (inches): 10 nitoring well, aerial photos, previous inspe	Wetlan	d Hydrology Present? Yes X No
Valer Fable Fresent? Fres X Saturation Present? Yes X (includes capillary fringe)	No Depth (inches):13	Wetlan	d Hydrology Present? Yes X No
Value Facility Fes X Saturation Present? Yes X (includes capillary fringe)	No Depth (inches):13	Wetlan	d Hydrology Present? Yes X No
Value Facility Fes X Saturation Present? Yes X (includes capillary fringe) Describe Recorded Data (stream gauge, mo Remarks:	No Depth (inches):13	Wetlan	d Hydrology Present? Yes X No
Value Facility Fes X Saturation Present? Yes X (includes capillary fringe) Describe Recorded Data (stream gauge, mo Remarks:	No Depth (inches):13	Wetlan	d Hydrology Present? Yes X No
Water Fable Fresent? Fres X Saturation Present? Yes X (includes capillary fringe)	No Depth (inches):13	Wetlan	d Hydrology Present? Yes X No
Water Fable Fresent? Fres X Saturation Present? Yes X (includes capillary fringe)	No Depth (inches):13	Wetlan	d Hydrology Present? Yes X No
Valer Fable Fresent? Fres X Saturation Present? Yes X (includes capillary fringe) Describe Recorded Data (stream gauge, mo Remarks: Remarks:	No Depth (inches):13	Wetlan	d Hydrology Present? Yes X No
Value Face Fresent? Fres X Saturation Present? Yes X (includes capillary fringe) Describe Recorded Data (stream gauge, mo Remarks:	No Depth (inches):13	Wetlan	d Hydrology Present? Yes X No
Water Fable Present? Fes X Saturation Present? Yes X (includes capillary fringe) Describe Recorded Data (stream gauge, mo Remarks:	No Depth (inches):13	Wetlan	d Hydrology Present? Yes X No
Vale Table Present? Yes X Saturation Present? Yes X (includes capillary fringe) Describe Recorded Data (stream gauge, mo Remarks:	No Depth (inches):13	Wetlan	d Hydrology Present? Yes X No
Water Fable Fresent? Fres X Saturation Present? Yes X (includes capillary fringe) Describe Recorded Data (stream gauge, mo Describe Recorded Data (stream gauge, mo Remarks:	No Depth (inches):13	Wetlan	d Hydrology Present? Yes X No

Sampling Point: 1-1_WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	30	Yes	FAC	Number of Dominant Species
2.				That Are OBL, FACW, or FAC:3 (A)
3 4.				Total Number of Dominant Species Across All Strata: 5 (B)
5.				Porcent of Dominant Species
6				That Are OBL, FACW, or FAC: 60.0% (A/B)
7				Prevalence Index worksheet:
	30	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species <u>5</u> x 1 = <u>5</u>
1. Rubus allegheniensis	2	Yes	FACU	FACW species 20 x 2 = 40
2. Rubus idaeus	5	Yes	FACU	FAC species 60 x 3 = 180
3		·		FACU species 7 x 4 = 28
4				UPL species 0 x 5 = 0
5				Column Totals: 92 (A) 253 (B)
6				Prevalence Index = B/A = 2.75
7				Hydrophytic Vegetation Indicators:
	7	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				X 2 - Dominance Test is >50%
1. Solidago rugosa	25	Yes	FAC	X 3 - Prevalence Index is ≤3.0 ¹
2 Lythrum salicaria	5	No	OBI	4 - Morphological Adaptations ¹ (Provide supporting
3 Impatiens canensis	20	Yes	FACW	data in Remarks or on a separate sheet)
Toyloodondron radicans	5	No		Problematic Hydrophytic Vegetation ¹ (Evaluin)
	5		FAC	
5				¹ Indicators of hydric soil and wetland hydrology must
6		·		be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	55	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines - All woody vines greater than 3 28 ft in
1.				height.
2.				
3.				Hydrophytic Manatalian
4.				Vegetation Present? Yes X No
		-Total Cover		
Pamarke: (Include photo numbers here or on a separ	ato shoot)			
	ale sheet.)			

SOIL	
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Depth	Matrix		Redo	x Featur	es			-
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-9	2.5y 2.5/1	98					Sandy	high organic matter
9-16	5y 5/2	98	10yr 4/6	2	С	М	Sandy	
		_				·		
						·		
		_		_	_	·		
		_			_	·		
¹ Type: C=C	oncentration. D=Dep	letion. RM	Reduced Matrix. N	/IS=Mas	ked Sand	Grains.	² Location: PL=	-Pore Lining, M=Matrix,
Hydric Soil Histosol Histoc El Black Hi Hydroge Stratified X Depleted Thick Da Sandy M Sandy G Sandy F Stripped Dark Su	Indicators: (A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Bleyed Matrix (S4) Redox (S5) d Matrix (S6) rface (S7) f hydrophytic vegetat	e (A11) ion and w	Polyvalue Belo MLRA 149B Thin Dark Surf High Chroma S Loamy Mucky Depleted Matri Redox Dark Su Depleted Dark Redox Depres Marl (F10) (LR etland hydrology mi	w Surfa) ace (S9 Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F R K, L)	ce (S8) () (LRR R 511) (LRF (F1) (LRF (F1) (LRF (F1) (LRF (F1) (LRF (F1) (LRF) (F1) (LRF)	LRR R, MLRA 1 R K, L) R K, L)	Indicators for 2 cm Muck Coast Prai 49B) 5 cm Muck Polyvalue I Thin Dark Iron-Manga Piedmont I Mesic Spo Red Paren Very Shalle Other (Exp	Problematic Hydric Soils ³ : (A10) (LRR K, L, MLRA 149B) rie Redox (A16) (LRR K, L, R) (y Peat or Peat (S3) (LRR K, L, R) Below Surface (S8) (LRR K, L) Surface (S9) (LRR K, L) anese Masses (F12) (LRR K, L, R) Floodplain Soils (F19) (MLRA 149B dic (TA6) (MLRA 144A, 145, 149B) th Material (F21) ow Dark Surface (F22) olain in Remarks)
Type: Depth (i	nches):						Hydric Soil Present?	? Yes <u>X</u> No
Remarks: This data for Version 7.0,	rm is revised from Nc 2015 Errata. (http://v	rthcentral ww.nrcs.u	and Northeast Reg usda.gov/Internet/F	ional Su SE_DOC	pplemen CUMENT	t Version S/nrcs142	2.0 to include the NRCS 2p2_051293.docx)	Field Indicators of Hydric Soils,

Project/Site: Hudson Logistics Center	City/County: Hudson Sampling Date: 12/2/20
Applicant/Owner: Hillwood Development	State: NH Sampling Point: 1-2_UPL
Investigator(s): Brendan Quigley, Gove Environmental Services	Section, Township, Range:
Landform (hillside, terrace, etc.): Lower Merrimack River Valley	.ocal relief (concave, convex, none): convex Slope %:
Subregion (LRR or MLRA): LRR R Lat: see map	Long: Datum:
Soil Map Unit Name:	NWI classification: PFO1B
Are climatic / hydrologic conditions on the site typical for this time of ye	ar? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly of	disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrologynaturally prot	olematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X If yes, optional Wetland Site ID: Impact Area 1			
Hydric Soil Present?	Yes	No X				
Wetland Hydrology Present?	Yes	No X				
Remarks: (Explain alternative procedures here or in a separate report.)						

Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) Water-Stained Leaves (B9) Drainage Patterns (B10) High Water Table (A2) Aquatic Fauna (B13) Moss Trim Lines (B16) Saturation (A3) Marl Deposits (B15) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Surface Water (A1)Water-Stained Leaves (B9)Drainage Patterns (B10)High Water Table (A2)Aquatic Fauna (B13)Moss Trim Lines (B16)Saturation (A3)Marl Deposits (B15)Dry-Season Water Table (C2)Water Marks (B1)Hydrogen Sulfide Odor (C1)Crayfish Burrows (C8)Sediment Deposits (B2)Oxidized Rhizospheres on Living Roots (C3)Saturation Visible on Aerial Imagery (C9)Drift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed Plants (D1)Algal Mat or Crust (B4)Recent Iron Reduction in Tilled Soils (C6)Geomorphic Position (D2)Iron Deposits (B5)Thin Muck Surface (C7)Shallow Aquitard (D3)Inundation Visible on Aerial Imagery (B7)Other (Explain in Remarks)Microtopographic Relief (D4)
High Water Table (A2) Aquatic Fauna (B13) Moss Trim Lines (B16) Saturation (A3) Marl Deposits (B15) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Saturation (A3) Marl Deposits (B15) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8) FAC-Neutral Test (D5)
Field Observations:
Surface Water Present? Yes No X Depth (inches):
Water Table Present? Yes No X Depth (inches):
Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No X
(includes capillary fringe)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:

Sampling Point: 1-2_UPL

	Absolute	Dominant	Indicator	
<u>Tree Stratum</u> (Plot size: <u>30'r</u>)	% Cover	Species?	Status	Dominance Test worksheet:
1. Betula populitolia	20	Yes	FAC	Number of Dominant Species
2. Quercus rubra	20	Yes	FACU	That Are OBL, FACW, or FAC:(A)
3. Prunus serotina		Yes	FACU	Total Number of Dominant
4. Populus tremuloides	15	Yes	FACU	Species Across All Strata: 8 (B)
5. Acer rubrum 6.	10	No	FAC	Percent of Dominant Species That Are OBL, FACW, or FAC: 12.5% (A/B)
7.				Prevalence Index worksheet:
	80	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15'r)				OBL species 0 x 1 = 0
1. Elaeagnus umbellata	10	Yes	UPL	FACW species $0 x 2 = 0$
2. Prunus serotina	15	Yes	FACU	FAC species $30 \times 3 = 90$
3.				FACU species 70 x 4 = 280
4.				UPL species $10 \times 5 = 50$
5.				Column Totals: 110 (A) 420 (B)
6				$\frac{1}{2} = \frac{1}{2} = \frac{1}$
7.				Hydrophytic Vegetation Indicators:
	25	-Total Cover		1 - Ranid Test for Hydronbytic Vegetation
Herb Stratum (Plot size: 5'r)				2 - Dominance Test is >50%
1	5	Vas		3 - Prevalence Index is <3.01
2		103		4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sanling/shrub - Woody plants less than 3 in DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12.				Herb - All berbaceous (non-woody) plants, regardless
	5	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines All woody vines greater than 3.28 ft in
1. Vitis labrusca	5	Yes	FACU	height.
2.				
3.				Hydrophytic
4.				Present? Yes No X
	5	=Total Cover		
Remarks: (Include photo numbers here or on a sepa	rate sheet.)			1

Profile Desc	ription: (Describe	to the dep	oth needed to doc	ument t	he indica	tor or co	onfirm the absence of	indicators.)	
Depth	Matrix		Redo	x Featur	es				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Rer	narks
0-5	10yr 3/2	100					Sandy		
5-13	10yr 4/6	100					Sandy		
13-20	2.5y 5/4	100					Sandy		
		<u> </u>							
		·							
		lotion PM	-Poducod Matrix	AS-Mac	kod Sand	Grains	² Location: PL	-Poro Lining M-	Motrix
Hydric Soil I	ndicators:			vio=ivias	keu Sano	i Grains.	Indicators fo	r Problematic H	vdric Soils ³
Histosol	(A1)		Polyvalue Belo	ow Surfa	ce (S8) (RR R.	2 cm Muc	k (A10) (LRR K.	L. MLRA 149B)
Histic Ep	ipedon (A2)	•	MLRA 149B))		,	Coast Pra	airie Redox (A16)	(LRR K. L. R)
Black His	stic (A3)		Thin Dark Surf	, ace (S9)) (LRR R	MLRA 1	49B) 5 cm Muc	kv Peat or Peat (S3) (LRR K. L. R)
Hydroger	n Sulfide (A4)		High Chroma S	Sands (S	511) (LRF	R K. L)	Polyvalue	Below Surface (S8) (LRR K. L)
Stratified	Lavers (A5)	•	Loamy Mucky	Mineral	(F1) (LRI	R K. L)	Thin Dark	Surface (S9) (LF	R K. L)
Depleted	Below Dark Surface	e (A11)	Loamy Gleved	Matrix ((F2)	, _/	Iron-Man	panese Masses (F	=12) (LRR K. L. R)
Thick Da	rk Surface (A12)		Depleted Matri	ix (F3)	,		Piedmont	Floodplain Soils	(F19) (MLRA 149B
Sandy M	ucky Mineral (S1)		Redox Dark Su	urface (F	-6)		Mesic Sp	odic (TA6) (MLRA	A 144A, 145, 149B)
Sandy G	leved Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Pare	nt Material (F21)	, -, -,
Sandy Re	edox (S5)	•	Redox Depres	sions (F	8)		Very Sha	llow Dark Surface	e (F22)
Stripped	Matrix (S6)	•	 Marl (F10) (LR	RK,L)	,		Other (Ex	plain in Remarks)
Dark Sur	face (S7)								
³ Indicators of	hydrophytic vegetat	ion and we	etland hydrology m	ust be pi	resent, ur	nless dist	urbed or problematic.		
Restrictive L	ayer (if observed):								
Туре:									
Depth (in	ches):						Hydric Soil Presen	t? Yes_	<u>No X</u>
Remarks:									
This data forr	m is revised from No	orthcentral	and Northeast Reg	ional Su	pplemen	Version	2.0 to include the NRC	S Field Indicators	of Hydric Soils,
Version 7.0, 2	2015 Errata. (http://v	www.nrcs.u	usda.gov/Internet/F	SE_DOO	CUMENT	S/nrcs14	2p2_051293.docx)		

Project/Site: Hudson Logistics Ce	enter		City/County: Hudson		Sampling Date: 12/2/20
Applicant/Owner: Hillwood De	velopment			State: NH	Sampling Point: 1-2_WET
Investigator(s): Brendan Quigley,	Gove Environmental S	Services	Section, Towns	hip, Range:	
Landform (hillside, terrace, etc.):	Lower Merrimack Riv	er Valley Local ı	relief (concave, convex, n	ione): concave	Slope %:
Subregion (LRR or MLRA): LRR	R Lat:	see map	Long:		Datum:
Soil Map Unit Name:				NWI classification	n: PFO1B
Are climatic / hydrologic conditions	on the site typical for	this time of year?	Yes	No (If no	, explain in Remarks.)
Are Vegetation, Soil	, or Hydrology	significantly distur	bed? Are "Normal	Circumstances" pre	esent? Yes X No
Are Vegetation, Soil	, or Hydrology	naturally problema	tic? (If needed, ex	xplain any answers	in Remarks.)
SUMMARY OF FINDINGS -	 Attach site map 	showing sam	pling point locatior	ns, transects, i	mportant features, etc.
Hydrophytic Vegetation Present?	Yes X	No	Is the Sampled Area		
Hydric Soil Present?	Yes X	No	within a Wetland?	Yes X	No
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetlar	nd Site ID: Impact	Area 1

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland Hydrology Indicators:			Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is require	Surface Soil Cracks (B6)		
Surface Water (A1)	Water-Stained Leaves (B9)		Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lines (B16)
X Saturation (A3)	Marl Deposits (B15)		Dry-Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Ro	oots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils	s (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquitard (D3)
X Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)		Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (E	38)		FAC-Neutral Test (D5)
Field Observations:			
Surface Water Present? Yes	No X Depth (inches):		
Water Table Present? Yes X	No Depth (inches): 15		
Saturation Present? Yes X	No Depth (inches): 10	Wetlan	d Hydrology Present? Yes X No
(includes capillary fringe)			
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspe	ctions), if a	available:
Remarks:			

Sampling Point: 1-2_WET

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size:)	% Cover	Species?	Status	Dominance Test worksheet:
1. Acer rubrum	25	Yes	FAC	Number of Dominant Species
2. Betula populifolia	5	No	FAC	That Are OBL, FACW, or FAC:4 (A)
3				Total Number of Dominant
4				Species Across All Strata: 5 (B)
5				Percent of Dominant Species
6			. <u> </u>	That Are OBL, FACW, or FAC: 80.0% (A/B)
7				Prevalence Index worksheet:
	30	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species 0 x 1 = 0
1. Frangula alnus	30	Yes	FAC	FACW species <u>5</u> x 2 = <u>10</u>
2. Betula populifolia	10	Yes	FAC	FAC species 70 x 3 = 210
3				FACU species <u>5</u> x 4 = <u>20</u>
4				UPL species x 5 = 0
5	_			Column Totals: 80 (A) 240 (B)
6.				Prevalence Index = $B/A = 3.00$
7.				Hydrophytic Vegetation Indicators:
	40	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				X 2 - Dominance Test is >50%
1. Osmundastrum cinnamomeum	5	Yes	FACW	X 3 - Prevalence Index is ≤3.0 ¹
2.				4 - Morphological Adaptations ¹ (Provide supporting
3.				data in Remarks or on a separate sheet)
4.		·		Problematic Hydrophytic Vegetation ¹ (Explain)
5		·		
6.				'Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in (7.6 cm) or more in
9.				diameter at breast height (DBH), regardless of height.
10.				Sapling/shrub Woody plants loss than 2 in DRH
11.				and greater than or equal to 3.28 ft (1 m) tall.
12.				Have All borbossous (non woody) plants, regardless
	5	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				
1. Vitis labrusca	5	Yes	FACU	woody vines – All woody vines greater than 3.28 ft in height.
2.		·		
3				Hydrophytic
4.		·		Vegetation Present? Yes X No
	5	=Total Cover	·	
Remarks: (Include photo numbers here or on a sena	rate sheet \			I

Depth	Matrix		Redo	ox Featur	res			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	2.5y 2.5/1	100					Sandy	high organic matter
8-15	5y 5/2	95	7.5yr 4/6	5	C	M	Sandy	
¹ Type: C=C	oncentration D=Den	letion RM	=Reduced Matrix	MS=Mas	ked San	d Grains	² l ocation: F	PI =Pore Lining M=Matrix
Hydric Soil	Indicators:						Indicators	for Problematic Hydric Soils ³ :
Histosol	(A1)		Polyvalue Belo	ow Surfa	ce (S8) (LRR R,	2 cm M	uck (A10) (LRR K, L, MLRA 149B)
Histic Ep	pipedon (A2)		MLRA 149E	B)			Coast F	Prairie Redox (A16) (LRR K, L, R)
Black Hi	istic (A3)		Thin Dark Sur	face (S9) (LRR R	, MLRA 1	149B) 5 cm M	ucky Peat or Peat (S3) (LRR K, L, R)
Hydroge	en Sulfide (A4)		High Chroma	Sands (S	511) (LR	R K, L)	Polyval	ue Below Surface (S8) (LRR K, L)
Stratified	d Layers (A5)		Loamy Mucky	Mineral	(F1) (LR	R K, L)	Thin Da	ark Surface (S9) (LRR K, L)
X Depleted	d Below Dark Surfac	e (A11)	Loamy Gleyed	d Matrix ((F2)	. ,	Iron-Ma	anganese Masses (F12) (LRR K, L, R)
Thick Da	ark Surface (A12)	()	Depleted Matr	ix (F3)	. ,		Piedmo	ont Floodplain Soils (F19) (MLRA 1498
Sandy N	lucky Mineral (S1)		 Redox Dark S	urface (F	-6)		Mesic S	Spodic (TA6) (MLRA 144A, 145, 149B
Sandy G	Bleyed Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Pa	rent Material (F21)
Sandy R	Redox (S5)		Redox Depres	sions (F	8)		Very Sh	nallow Dark Surface (F22)
Stripped	Matrix (S6)		Marl (F10) (LF	RRK,L)			Other (I	Explain in Remarks)
Dark Su	rface (S7)							
³ Indicators o	f hydrophytic vegeta	tion and w	etland hydrology m	ust be p	resent, u	nless dist	urbed or problematic.	
Restrictive	Layer (if observed):							
Depth (ii	nches):						Hydric Soil Prese	ent? Yes <u>X</u> No
Remarks:							1	
This data for	m is revised from No	orthcentral	and Northeast Reg	gional Su		t Version	2.0 to include the NR	CS Field Indicators of Hydric Soils,
	2015 Enala. (http://v	www.nics.u	usua.gov/internet/F	36_000		3/11/05/14	2p2_031293.000x)	

Project/Site: Hudson Logistics Center	City/County: Hudson Sampling Date: 12/2/20
Applicant/Owner: Hillwood Development	State: NH Sampling Point: 2_UPL
Investigator(s): Brendan Quigley, Gove Environmental Services	Section, Township, Range:
Landform (hillside, terrace, etc.): Lower Merrimack River Valley Loc	cal relief (concave, convex, none): convex Slope %:
Subregion (LRR or MLRA): LRR R Lat: see map	Long: Datum:
Soil Map Unit Name:	NWI classification: PFO1B
Are climatic / hydrologic conditions on the site typical for this time of year	? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly dis	turbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrologynaturally proble	matic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sa	ampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area
Hydric Soil Present?	Yes	No X	within a Wetland? Yes No X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID: Impact Area 2
Remarks: (Explain alternative procedu	res here or in a	separate report.)	

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is require	Surface Soil Cracks (B6)	
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots	(C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C	C6) Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8	3)	FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes	No X Depth (inches):	
Water Table Present? Yes	No X Depth (inches):	
Saturation Present? Yes	No X Depth (inches):	Wetland Hydrology Present? Yes No X
(includes capillary fringe)		
Describe Recorded Data (stream gauge, mon	itoring well, aerial photos, previous inspectio	ons), if available:
Remarks:		

Sampling Point: 2_UPL

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant	Indicator Status	Dominance Test worksheet:
1 Pinus strobus	<u>15</u>	Vos	FACIL	Dominance rest worksheet.
	25	Ves	FACU	Number of Dominant Species
3 Acer rubrum	20	Vec	FAC	
		163		Total Number of Dominant
T				
6				Percent of Dominant Species
7				Prevalence Index worksheet:
	60	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15'r)				$\begin{array}{c c c c c c c c c c c c c c c c c c c $
1. Frangula alnus	10	Yes	FAC	FACW species $0 x^2 = 0$
2. Prunus serotina	5	Yes	FACU	FAC species 42 x 3 = 126
3. Acer rubrum	10	Yes	FAC	FACU species 45 x 4 = 180
4.				UPL species $0 \times 5 = 0$
5.				Column Totals: 87 (A) 306 (B)
6.				Prevalence Index = $B/A = 3.52$
7.				Hydrophytic Vegetation Indicators:
	25	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5'r)				2 - Dominance Test is >50%
1. Dryopteris intermedia	2	No	FAC	 3 - Prevalence Index is ≤3.0 ¹
2.				4 - Morphological Adaptations ¹ (Provide supporting
3.				data in Remarks or on a separate sheet)
4.				Problematic Hydrophytic Vegetation ¹ (Explain)
5.				
6.				be present, unless disturbed or problematic.
7.				Definitions of Vegetation Strata:
8.				Tree Weady plants 2 in (7.6 cm) or more in
9.				diameter at breast height (DBH), regardless of height.
10.				Sanling/chrub - Woody plants less than 3 in DBH
11.				and greater than or equal to 3.28 ft (1 m) tall.
12.				Herb - All herbaceous (non-woody) plants, regardless
	2	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines - All woody vines greater than 3.28 ft in
1				height.
2				
3				Hydrophytic Vegetation
4				Present? Yes No X
	:	=Total Cover		
Remarks: (Include photo numbers here or on a sepa	arate sheet.)			

Profile Desc	ription: (Describe	to the dep	oth needed to doc	ument t	he indica	ator or co	onfirm the absence of indic	ators.)
(inches)	Color (moist)	%	Color (moist)	% realu	Type ¹	loc^2	Texture	Remarks
0-12	10vr 3/2	100		/0	1990		Sandy	Kelhano
12-18	10vr 5/4	100					Sandy	
		·						
¹ Type: C=Co	oncentration, D=Dep	bletion, RM	=Reduced Matrix, N	//S=Mas	ked Sand	Grains.	² Location: PL=Pore	e Lining, M=Matrix.
Hydric Soil I	ndicators:						Indicators for Prol	blematic Hydric Soils ³ :
Histosol	(A1)		Polyvalue Belo	ow Surfa	ce (S8) (I	LRR R,	2 cm Muck (A1	0) (LRR K, L, MLRA 149B)
Histic Ep	ipedon (A2)		MLRA 149B	5)			Coast Prairie R	edox (A16) (LRR K, L, R)
Black His	stic (A3)		Thin Dark Surf	ace (S9) (LRR R	, MLRA 1	49B) 5 cm Mucky Pe	eat or Peat (S3) (LRR K, L, R)
Hydrogei	n Sulfide (A4)		High Chroma	Sands (S	511) (LRF	R K, L)	Polyvalue Belo	w Surface (S8) (LRR K, L)
Stratified	Lavers (A5)		Loamy Mucky	Mineral	(F1) (LRI	R K, L)	Thin Dark Surfa	ace (S9) (LRR K, L)
 Depleted	Below Dark Surfac	e (A11)	Loamy Gleved	Matrix ((F2)	. ,	Iron-Manganes	e Masses (F12) (LRR K. L. R)
Thick Da	rk Surface (A12)	0 (/)	Depleted Matri	ix (F3)	/		Piedmont Floor	dolain Soils (F19) (MI RA 149B)
Nick Da	ucky Minoral (S1)		Bodox Dark Si	urfaco (E	56)		Mosic Spodic (TAG) (MI DA 144A 145 149B)
	laved Metrix (C4)				0) (F7)			tarial (504)
Sandy G	leyed Matrix (54)			Sunace	e (F7)			
Sandy R	edox (S5)		Redox Depres	sions (F	8)		Very Shallow D	Park Surface (F22)
Stripped	Matrix (S6)		Marl (F10) (LR	R K, L)			Other (Explain	in Remarks)
Dark Sur	face (S7)							
³ Indicators of	hydrophytic vegeta	tion and w	etland hydrology m	ust be p	resent, ur	nless dist	urbed or problematic.	
Restrictive L	.ayer (if observed):	:						
Depth (in	iches):						Hydric Soil Present?	Yes No X
Remarks:	,							
This data for	n is revised from No	orthcentral	and Northeast Reg	ional Si	Innlemen	t Version	2.0 to include the NRCS Fiel	d Indicators of Hydric Soils
Version 7.0.	2015 Errata. (http://	www.nrcs.u	usda.gov/Internet/F	SE DO	CUMENT	S/nrcs14	2p2 051293.docx)	,
			-					

Project/Site: Hudson Logistic	cs Center		City/County: Hudson		Sampling Date: 12/	/2/20		
Applicant/Owner: Hillwoo	od Development			State: NH	Sampling Point:	2_WET		
Investigator(s): Brendan Quigley, Gove Environmental Services Section, Township, Range:								
Landform (hillside, terrace, etc	c.): Lower Merrimack	River Valley Local re	elief (concave, convex, non	e): swale	Slope %	:		
Subregion (LRR or MLRA):	LRR R L	at: see map	Long:		Datum:			
Soil Map Unit Name:			N	WI classification:	PFO1B			
Are climatic / hydrologic condi	itions on the site typical	for this time of year?	Yes X	No (If no, e	explain in Remarks.)			
Are Vegetation, Soil	, or Hydrology	significantly disturb	ed? Are "Normal Cir	cumstances" pres	ent? Yes X No	<u> </u> נ		
Are Vegetation, Soil	, or Hydrology	naturally problemat	ic? (If needed, expl	ain any answers ir	n Remarks.)			
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.								
Hydrophytic Vegetation Pres	sent? Yes	X No	Is the Sampled Area					
Hydric Soil Present?	Yes	X No	within a Wetland? Yes X No					
Wetland Hydrology Present? Yes X No If yes, optional Wetland Site ID: Impact Area 2								
Remarks: (Explain alternative procedures here or in a separate report.)								

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one is require	Surface Soil Cracks (B6)			
Surface Water (A1)	X Drainage Patterns (B10)			
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lines (B16)	
Saturation (A3)	Marl Deposits (B15)		Dry-Season Water Table (C2)	
Water Marks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burrows (C8)	
Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Ro	oots (C3)	Saturation Visible on Aerial Imagery (C9)	
Drift Deposits (B3)	Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)	
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils	s (C6)	Geomorphic Position (D2)	
Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)		Microtopographic Relief (D4)	
Sparsely Vegetated Concave Surface (B	8)		X FAC-Neutral Test (D5)	
Field Observations:				
Surface Water Present? Yes	No X Depth (inches):			
Water Table Present? Yes	No X Depth (inches):			
	Doput (monoo).			
Saturation Present? Yes	No X Depth (inches):	Wetlan	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe)	No X Depth (inches):	Wetlan	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor	No X Depth (inches):	Wetlan ections), if a	d Hydrology Present? Yes X No Available:	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor	No X Depth (inches):	Wetlan	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor	No X Depth (inches):	Wetlan ections), if a	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor Remarks:	No X Depth (inches):	Wetlan	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor Remarks:	No X Depth (inches):	Wetlan	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor Remarks:	No X Depth (inches):	Wetlan ections), if a	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor Remarks:	No X Depth (inches):	Wetlan	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor Remarks:	No X Depth (inches):	Wetlan	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor Remarks:	No X Depth (inches):	Wetlan	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor Remarks:	No X Depth (inches):	Wetlan	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor Remarks:	No X Depth (inches):	Wetlan	d Hydrology Present? Yes X No	
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, mor Remarks:	No X Depth (inches):	Wetlan	d Hydrology Present? Yes X No	

Sampling Point: 2_WET

Tree Stratum (Plot size: 10' x30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. 2.				Number of Dominant Species That Are OBL, FACW, or FAC:3 (A)
3 4				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
5 6				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
7				Prevalence Index worksheet:
	:	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 10'x15')				OBL species 0 x 1 = 0
1. Acer rubrum	5	Yes	FAC	FACW species 5 x 2 = 10
2	. <u></u>			FAC species 10 x 3 = 30
3	. <u></u>			FACU species 0 x 4 = 0
4				UPL species 0 x 5 = 0
5				Column Totals: 15 (A) 40 (B)
6				Prevalence Index = B/A = 2.67
7.				Hydrophytic Vegetation Indicators:
	5	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5'r)				X 2 - Dominance Test is >50%
1. Osmundastrum cinnamomeum	5	Yes	FACW	X 3 - Prevalence Index is ≤3.0 ¹
2. Drvopteris intermedia	5	Yes	FAC	4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4	·			Problematic Hydrophytic Vegetation ¹ (Explain)
5				
5		·		¹ Indicators of hydric soil and wetland hydrology must
o				Definitions of Vanctation Starter
/				Definitions of vegetation Strata.
8 9				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
10 11				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
12	10	=Total Cover		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				Hydrophytic
3				Vegetation
4				Present? Yes X No
		=Total Cover		
Remarks: (Include photo numbers here or on a sepa narrow wetland area. Tree and shub plots adjusted to	arate sheet.) o wid of wetka	and (~10' wide)	

SOIL	
------	--

Profile Des	cription: (Describe	to the de	pth needed to doc	ument t	he indica	ator or c	onfirm the absence of indi	cators.)	
Depth	 Matrix		Redo	x Featur	es				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-8	10yr 2/1	98	7.5yR 3/3	2	С	М	Sandy	ox rhizo	
8-10	2.5y 4/1	98	7.5yr 3/3	2	С	М	Sandy		
10-15	2.5y 5/2	95	10yr 4/4	5	С	М	Sandy		
	· · · · · · · · · · · · · · · · · · ·								
	·								
	·								
¹ Type: C=C	oncentration, D=Dep	letion, RM	I=Reduced Matrix, N	//S=Mas	ked Sand	d Grains.	² Location: PL=Po	re Lining, M=Matrix	ζ.
Hydric Soil	Indicators:						Indicators for Pro	blematic Hydric S	3oils ³ :
Histosol	l (A1)		Polyvalue Belo	ow Surfa	ce (S8) (LRR R,	2 cm Muck (A	10) (LRR K, L, ML	RA 149B)
Histic E	pipedon (A2)		MLRA 149B	5)			Coast Prairie	Redox (A16) (LRR	K, L, R)
Black H	istic (A3)		Thin Dark Surf	ace (S9)) (LRR R	, MLRA [·]	149B) 5 cm Mucky F	eat or Peat (S3) (L	.RR K, L, R)
Hydroge	en Sulfide (A4)		High Chroma	Sands (S	511) (LRI	Κ Κ, L)		ow Surface (S8) (LI	RR K, L)
Stratifie	d Layers (A5)	- (Loamy Mucky	iviinerai	(F1) (LR	κκ, L)	Thin Dark Surface (S9) (LRR K, L)		
X Depiete	d Below Dark Surface	e (A11)	Loamy Gleyed	Matrix (F2)			se Masses (F12) (L	$-\mathbf{R}\mathbf{R}\mathbf{K},\mathbf{L},\mathbf{R}$
	ark Surface (A12)		Depleted Math	IX (F3)			Pleamont Floo	(TAC) (MI DA 444A	(WILRA 149B)
	Mucky Mineral (S1)		Redox Dark Si	urrace (F	·6)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
Sandy C	Bleyed Matrix (S4)		Depleted Dark	Surface	e (⊢7)		Red Parent Material (F21)		
Sandy F	Redox (S5)		Redox Depres	sions (F	8)		Very Shallow Dark Surface (F22)		
Stripped	d Matrix (S6)		Marl (F10) (LR	(R K, L)			Other (Explain	i in Remarks)	
Dark Su	irface (S7)								
³ Indicators c	of hydrophytic vegetat	tion and w	etland hydrology m	ust be pr	resent, u	nless dist	urbed or problematic.		
Restrictive	Layer (if observed):								
Type: Depth (i	nches):						Hydric Soil Present?	Yes	No
Remarks:									
This data for	rm is revised from No	orthcentral	and Northeast Reg	ional Su	nnlemen	t Version	2.0 to include the NRCS Fig	eld Indicators of Hy	dric Soils
Version 7.0,	2015 Errata. (http://v	vww.nrcs.	usda.gov/Internet/F	SE_DOC	CUMENT	S/nrcs14	2p2_051293.docx)		ano c ono,

Project/Site: Hudson Logistics Center		City/County: Hudson	Sampling Date: 11/25/20			
Applicant/Owner: Hillwood Developm	ment	State:	NH Sampling Point: 3-UPL			
Investigator(s): Brendan Quigley, Gove	Environmental Services	Section, Township, Range:				
Landform (hillside, terrace, etc.): Lowe	er Merrimack River Valley Local r	elief (concave, convex, none): near fl	at Slope %:			
Subregion (LRR or MLRA): LRR R	Lat: see map	Long:	Datum:			
Soil Map Unit Name:		NWI classi	fication: PEM2Bf			
Are climatic / hydrologic conditions on the	e site typical for this time of year?	Yes X No	(If no, explain in Remarks.)			
Are Vegetation X, Soil , or H	Hydrologysignificantly disturb	ed? Are "Normal Circumstance	es" present? Yes <u>No X</u>			
Are Vegetation, Soil, or H	Hydrologynaturally problema	tic? (If needed, explain any an	swers in Remarks.)			
SUMMARY OF FINDINGS – Atta	ach site map showing sam	oling point locations, transe	cts, important features, etc.			
Hydrophytic Vegetation Present?	Yes No X	Is the Sampled Area				
Hydric Soil Present?	Yes No X	within a Wetland? Yes	No X			
Wetland Hydrology Present?	Yes No X	If yes, optional Wetland Site ID:	Impact Area 3			
Remarks: (Explain alternative procedures here or in a separate report.) Trasect is located in an area of maintained golf course turf and consists of cultivated sod forming grass, likley kentucky bluegrass. The area is not likley to support hydrophytic vegeation under normal circumstanses based on appaeance of cultivated lawn and lack of signs of hydrology						
HYDROLOGY						

Wetland Hydrology Indicat	ors:	Secondary Indicators (minimum of two required)					
Primary Indicators (minimum	<u>ı of one is requir</u>	Surface Soil Cracks (B6)					
Surface Water (A1)		Drainage Patterns (B1	0)				
High Water Table (A2)		Aquation	c Fauna (B13)		Moss Trim Lines (B16)	
Saturation (A3)		Marl D	eposits (B15)		Dry-Season Water Ta	ble (C2)	
Water Marks (B1)		Hydrog	gen Sulfide Odor (C1)		Crayfish Burrows (C8)	I	
Sediment Deposits (B2)		Oxidize	ed Rhizospheres on Living Ro	oots (C3)	Saturation Visible on A	Aerial Imagery (C9)	
Drift Deposits (B3)		Preser	nce of Reduced Iron (C4)		Stunted or Stressed P	lants (D1)	
Algal Mat or Crust (B4)		Recent	t Iron Reduction in Tilled Soils	s (C6)	Geomorphic Position	(D2)	
Iron Deposits (B5)		Thin M	uck Surface (C7)		Shallow Aquitard (D3)		
Inundation Visible on Ae	rial Imagery (B7) Other ((Explain in Remarks)		Microtopographic Reli	ef (D4)	
Sparsely Vegetated Con	icave Surface (B	8)			FAC-Neutral Test (D5)	
Field Observations:							
Surface Water Present?	Yes	No X	Depth (inches):				
Water Table Present?	Yes	No X	Depth (inches):				
Saturation Present?	Yes	No X	Depth (inches):	Wetlan	d Hydrology Present?	Yes No >	х
(includes capillary fringe)							
Describe Recorded Data (str	eam gauge, mor	nitoring well,	aerial photos, previous inspe	ections), if	available:		
Remarks:							

Sampling Point: 3-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. 2.				Number of Dominant Species That Are OBL, FACW, or FAC:(A)
3				Total Number of Dominant Species Across All Strata: (B)
5				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
7.				Prevalence Index worksheet:
		=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species x1 =
1. <u> </u>				FACW species x 2 =
2.				FAC species x 3 =
3.				FACU species x 4 =
4.				UPL species x 5 =
5.				Column Totals: (A) (B)
6.				Prevalence Index = B/A =
7.				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				2 - Dominance Test is >50%
1. Maintained lawn (kentucky bluegrass)				3 - Prevalence Index is ≤3.0 ¹
2.				4 - Morphological Adaptations ¹ (Provide supporting
3				data in remarks of on a separate sheety
4				Problematic Hydrophytic Vegetation' (Explain)
5 6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7.				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
10 11.				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
12.		=Total Cover		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
<u>Woody Vine Stratum</u> (Plot size:) 1.				Woody vines – All woody vines greater than 3.28 ft in height.
2.				
3.				Hydrophytic Vogetation
4.				Present? Yes No X
		=Total Cover		
Remarks: (Include photo numbers here or on a separate see remarks in summary of findings	rate sheet.)			

Profile Desc	ription: (Describe	to the de	oth needed to doc	ument t	he indica	tor or c	onfirm the absence of indic	cators.)		
Depth	Matrix		Redo	x Featu	res					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Rema	ırks	
0-10	10yr 3/2	100					Sandy			
10-16	2.5y 5/3	95	10yr 5/6	5	С	М	Sandy			
16-20	2.5y 6/3	95	10yr 5/6	5	С	М	Sandy			
		·								
<u> </u>		·								
		·								
		lotion BM	-Roduced Metrix	18-Maa	kod Sono		² Location: DL-Dor	olining M-M	otriv	
Hydric Soil I	ndicators:			vio=ivias	keu Sano	i Grains.	Indicators for Pro	blematic Hvdr	ric Soils ³ .	
Histosol	(A1)		Polyvalue Belo	ow Surfa	ce (S8) (I	LRR R.	2 cm Muck (A	10) (LRR K, L ,	MLRA 149B)	
Histic Ep	ipedon (A2)		 MLRA 149B	5)	()(Coast Prairie F	Redox (A16) (L	RR K, L, R)	
Black His	stic (A3)		Thin Dark Surf	ace (S9) (LRR R	MLRA	149B) 5 cm Mucky P	eat or Peat (S3	3) (LRR K, L, R)	
Hydroger	n Sulfide (A4)		High Chroma	Sands (S	511) (LRF	R K, L)	Polyvalue Belo	w Surface (S8)) (LRR K, L)	
Stratified	Layers (A5)		Loamy Mucky	Mineral	(F1) (LRI	R K, L)	Thin Dark Surf	ace (S9) (LRR	K, L)	
Depleted	Below Dark Surface	e (A11)	Loamy Gleyed	Matrix ((F2)		Iron-Manganes	se Masses (F12	2) (LRR K, L, R)	
Thick Da	rk Surface (A12)		Depleted Matri	ix (F3)			Piedmont Floodplain Soils (F19) (MLRA 149B)			
Sandy M	ucky Mineral (S1)		Redox Dark Si	urface (F	F6)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)			
Sandy G	leyed Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Parent Material (F21)			
Stripped	edox (SS) Matrix (S6)		Marl (E10) (I R		0)		Very Shallow Dark Surface (F22)			
Dark Sur	face (S7)			, ∟)			Other (Explain in Remarks)			
³ Indicators of	hydrophytic vegeta	tion and w	etland hydrology m	ust be p	resent, ur	nless dist	turbed or problematic.			
Restrictive L	ayer (if observed):									
Туре:										
Depth (in	ches):						Hydric Soil Present?	Yes	<u>No X</u>	
Remarks:										
Soil has beer	disturbed by regrae	ding for co	nstruction of the go	If course	e					
I										

	i Northeentral and Northeast Region					
Project/Site: Hudson Logistics Center 0	City/County: Hudson Sampling Date: 11/25/20					
Applicant/Owner: Hillwood Development	State: NH Sampling Point: 3-WET					
Investigator(s): Brendan Quigley, Gove Environmental Services	Section, Township, Range:					
Landform (hillside, terrace, etc.): Lower Merrimack River Valley Local re	lief (concave, convex, none): near flat Slope %:					
Subregion (LRR or MLRA): LRR R Lat: see map	Long: Datum:					
Soil Map Unit Name:	NWI classification: PEM2Bf					
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes X No (If no explain in Remarks)					
Are Vegetation X Soil or Hydrology significantly disturbed	ad? Are "Normal Circumstances" present? Ves No X					
Are Vegetation <u>X</u> , con <u>, or Hydrology</u> symmetrially arehemetic	$\frac{1}{2}$					
SUMMARY OF FINDINGS – Attach site map showing samp	ling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Area					
Hydric Soil Present? Yes X No	within a Wetland? Yes X No					
Wetland Hydrology Present? Yes X No	If yes, optional Wetland Site ID: Impact Area 3					
Remarks: (Explain alternative procedures here or in a separate report.)						
Trasect is located in an area of maintained golf course turf and consists of cu	ultivated sod forming grass, likley kentucky bluegrass. The area is very					
likley to support hydrophytic vegeation under normal circumstanses based or adjacnt non-maintained areas	n observatuion of sod stressed by peristent ponding and vegetation in					
HYDROLOGY						
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)					
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)					
Surface Water (A1)Water-Stained Leaves (B9	Drainage Patterns (B10)					
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)					
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)					
Water Marks (B1) Hydrogen Sulfide Odor (C	1) Crayfish Burrows (C8)					
Sediment Deposits (B2) X Oxidized Rhizospheres on	Living Roots (C3) X Saturation Visible on Aerial Imagery (C9)					
Drift Deposits (B3) Presence of Reduced Iron	X Stunted or Stressed Plants (D1) Tilled Seile (C2) Commercial Desition (D2)					
Algal Mat of Crust (B4) Recent from Reduction in T	Shellow Aquiterd (D2)					
Interview Strate (C7)	Shallow Aquitatu (D3)					
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)					
Field Observations:						
Surface Water Present? Yes No X Depth (inches):						
Water Table Present? Yes No X Depth (inches):						
Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes X No						
(includes capillary fringe)						
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Descela						
Remarks.						

Sampling Point: 3-WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. 2.				Number of Dominant Species That Are OBL, FACW, or FAC:(A)
3				Total Number of Dominant Species Across All Strata: (B)
5. 6.				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
7.				Prevalence Index worksheet:
		=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species x 1 =
1.				FACW species x 2 =
2.				FAC species x 3 =
3.				FACU species x 4 =
4.				UPL species x 5 =
5.				Column Totals: (A) (B)
6.				Prevalence Index = B/A =
7.				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				2 - Dominance Test is >50%
1. Maintained lawn (kentucky bluegrass)				3 - Prevalence Index is ≤3.0 ¹
2.				4 - Morphological Adaptations ¹ (Provide supporting
3.				data in Remarks or on a separate sheet)
4.				Problematic Hydrophytic Vegetation ¹ (Explain)
5.				
6.				be present, unless disturbed or problematic.
7.				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	:	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
1			. <u></u>	height.
2				Hydrophytic
3				Vegetation
4				Present? Yes <u>X</u> No
	:	=Total Cover		
Remarks: (Include photo numbers here or on a sepa see remarks in summatry of findings	rate sheet.)			

Profile Desc	ription: (Describe	to the dep	oth needed to doc	ument tl	he indica	ator or c	confirm the absence of indicators.)
(inches)	Color (moist)	%	Color (moist)	x realur		1 oc^2	Texture Remarks
		100		70	турс	100	
0-3	10yr 2/2	100					Sandy Oxidized mizopspheres
3-13	2.5y 2.5/1	100					Sandy high organic content
13-16	5y 5/1	90	2.5y 5/6	10	С	М	Sandy
		·					
		<u> </u>					
	D Den	Lation DM	Deduced Metrix				² l continu
Hydric Soil I	ndicators:	ielion, Rivi	=Reduced Matrix, N	vio=iviasi	keu Sano	u Grains.	Indicators for Problematic Hydric Soils ³
Histosol	(A1)		Polyvalue Belo	ow Surfa	ce (S8) (LRR R.	2 cm Muck (A10) (LRR K. L. MLRA 149B)
Histic Ep	vipedon (A2)		MLRA 149B)				Coast Prairie Redox (A16) (LRR K, L, R)
Black His	stic (A3)		Thin Dark Surf	, ace (S9)) (LRR R	, MLRA	149B) 5 cm Mucky Peat or Peat (S3) (LRR K, L, F
Hydroge	n Sulfide (A4)		High Chroma	Sands (S	611) (LR	R K, L)	Polyvalue Below Surface (S8) (LRR K, L)
Stratified	l Layers (A5)		Loamy Mucky	Mineral	(F1) (LR	R K, L)	Thin Dark Surface (S9) (LRR K, L)
Depleted	Below Dark Surface	e (A11)	Loamy Gleyed	Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L,
Thick Da	rk Surface (A12)		Depleted Matri	ix (F3)			Piedmont Floodplain Soils (F19) (MLRA 14
Sandy M	lucky Mineral (S1)		Redox Dark Su	urface (F	6)		Mesic Spodic (TA6) (MLRA 144A, 145, 149
Sandy G	leyed Matrix (S4)		Depleted Dark	Surface	(F7)		Red Parent Material (F21)
Sandy R	edox (S5)		Redox Depres	sions (Fa	8)		Very Shallow Dark Surface (F22)
Stripped	Matrix (S6)		Marl (F10) (LR	(R K, L)			Other (Explain in Remarks)
X Dark Sur	tace (S7)						
³ Indicators of	hvdrophytic vegetat	tion and w	etland hydrology mi	ust be pr	esent. u	nless dist	sturbed or problematic.
Restrictive L	_ayer (if observed):		ellana nyarology m		ocont, a		
Type:	,						
Depth (in	nches):						Hydric Soil Present? Yes X No
Bomorko:							
Soil has beer	n disturbed by regrad	dina for co	nstruction of the ao	If course	•		
	·						
1							
Project/Site: Hudson Logistics Center	City/County: Hudson Sampling Date: 12/2/20						
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Applicant/Owner: Hillwood Development	State: NH Sampling Point: B_UPL						
Investigator(s): Brendan Quigley, Gove Environmental Services	Section, Township, Range:						
Landform (hillside, terrace, etc.): Lower Merrimack River Valley Loo	al relief (concave, convex, none): convex Slope %:						
Subregion (LRR or MLRA): LRR R Lat: see map	Long: Datum:						
Soil Map Unit Name:	NWI classification: PFO1B						
Are climatic / hydrologic conditions on the site typical for this time of year	? Yes No (If no, explain in Remarks.)						
Are Vegetation, Soil, or Hydrologysignificantly dis	turbed? Are "Normal Circumstances" present? Yes X No						
Are Vegetation, Soil, or Hydrologynaturally proble	matic? (If needed, explain any answers in Remarks.)						
SUMMARY OF FINDINGS – Attach site map showing sa	mpling point locations, transects, important features, etc.						

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X If yes, optional Wetland Site ID: Impact Area B
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	
Remarks: (Explain alternative procedures	here or in a s	eparate report.)	

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is require	ed; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots	(C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C	C6) Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8	3)	FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes	No X Depth (inches):	
Water Table Present? Yes	No X Depth (inches):	
Saturation Present? Yes	No X Depth (inches):	Wetland Hydrology Present? Yes No X
(includes capillary fringe)		
Describe Recorded Data (stream gauge, mon	itoring well, aerial photos, previous inspectio	ons), if available:
Remarks:		

Sampling Point: B_UPL

Tree Stratum (Plot size:	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet
1 Pinus strobus	25	Yes	FACU	
2 Quercus rubra	25	Yes	FACU	Number of Dominant Species That Are OBL_EACW_or EAC: 1 (A)
3 Betula lenta	20	Ves	FACU	
4 Betula populifolia	10	<u> </u>	FAC	Total Number of Dominant
5 Acer rubrum	5	No	FAC	
6				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>12.5%</u> (A/B)
7				Prevalence Index worksheet:
	85	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species 0 x 1 = 0
1. Pinus strobus	5	Yes	FACU	FACW species 2 x 2 = 4
2. Prunus serotina	5	Yes	FACU	FAC species <u>17</u> x 3 = <u>51</u>
3. Frangula alnus	2	No	FAC	FACU species 82 x 4 = 328
4				UPL species x 5 =10
5				Column Totals: 103 (A) 393 (B)
6				Prevalence Index = B/A = 3.82
7				Hydrophytic Vegetation Indicators:
	12	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				2 - Dominance Test is >50%
1. Osmundastrum cinnamomeum	2	Yes	FACW	3 - Prevalence Index is ≤3.0 ¹
2. Carex pensylvanica	2	Yes	UPL	4 - Morphological Adaptations ¹ (Provide supporting
3. Pinus strobus	2	Yes	FACU	data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	6	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				
3				Hydrophytic Vegetation
4				Present? Yes No X
		=Total Cover		
Remarks: (Include photo numbers here or on a separ	ate sheet.)			

L

(inchoo)	Matrix		Redox	x Featur	res			
(incries)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-5	10yr 2/1						Sandy	
5-11	10yr 3/2						Sandy	
11-17	10yr 4/4						Sandy	
						<u> </u>		
							·	
¹ Type: C=Conce	ntration, D=Depl	etion, RM	=Reduced Matrix, M	IS=Mas	ked Sanc	Grains.	² Location: PL=P	ore Lining, M=Matrix.
Hydric Soil India	ators:		Polyvalue Belo	w Surfa	co (S8) (I		Indicators for P	roblematic Hydric Soils":
Histic Enined	lon(A2)		MI RA 1498	w Sulla	ce (36) (I		Coast Prairie	$\mathbf{R} = \mathbf{A} \left(\mathbf{L} \mathbf{R} \mathbf{R} \mathbf{K} \mathbf{I} \mathbf{R} \mathbf{K} \mathbf{I} \mathbf{R} \mathbf{K} \mathbf{I} \mathbf{R} \mathbf{R} \right)$
Black Histic ((A2)		Thin Dark Surf) 200 (SD				Post or Post (S3) (I PP K I I
Hydrogen Su	Ifide (A4)		High Chroma S	ace (39 Sands (9) (LKK K, S11) (I RE	KI)	Polyvalue Be	$\frac{1}{1000} = \frac{1}{1000} = 1$
Tryutogen 3u	(A4)			Minoral	(E1) (LRF	, , , ,	Thin Dark Su	
Depleted Bel	ow Dark Surface	(A11)	Loamy Gleved	Matrix ((F2)	、 ι、 ∟)	Iron-Mangan	ese Masses (F12) (I RR K. L.
Thick Dark S	urface (A12)	, (, (, (,))	Depleted Matri	x (F3)	12)		Piedmont Flo	odolain Soils (F19) (MI RA 14
Sandy Mucky	/ Mineral (S1)		Bedox Dark Si	irface (F	-6)		Mesic Spodi	с (ТАб) (MI RA 144A, 145, 14 9
Sandy Gleve	d Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Parent I	Material (F21)
Sandy Redox	((\$5)		Redox Depress	sions (F	8)		Verv Shallow	/ Dark Surface (F22)
Stripped Mat	rix (S6)		Marl (F10) (LR	R K . L)	0)		Other (Expla	in in Remarks)
Dark Surface	e (S7)		(11011 (1110) (111	, _/				in in ternance)
³ Indicators of hyd	rophytic vegetat	ion and w	etland hydrology mu	ust be p	resent, ur	nless distu	urbed or problematic.	
Restrictive Laye	r (if observed):							
Dopth (inchor	o).						Hudria Sail Bracant?	Vac Na V
Depth (inches	s).						Hydric Soll Present?	

Project/Site: Hudson Logistics Cen	ter	City/County: Hudson		Sampling Date: 12	2/2/20
Applicant/Owner: Hillwood Deve	elopment	St	ate: NH	Sampling Point:	B_WET
Investigator(s): Brendan Quigley, G	ove Environmental Services	Section, Township, Rar	ge:		
Landform (hillside, terrace, etc.):	_ower Merrimack River Valley	Local relief (concave, convex, none): co	ncave	Slope %	»:
Subregion (LRR or MLRA): LRR R	Lat: see map	Long:		Datum:	
Soil Map Unit Name:		NWI c	assification	n: PFO1B	
Are climatic / hydrologic conditions o	in the site typical for this time of	year? Yes No	(If no	, explain in Remarks.)	
Are Vegetation, Soil,	or Hydrologysignificantl	ly disturbed? Are "Normal Circums	tances" pre	esent? Yes X N	0
Are Vegetation, Soil,	or Hydrologynaturally p	roblematic? (If needed, explain ar	y answers	in Remarks.)	
SUMMARY OF FINDINGS -	Attach site map showing	g sampling point locations, trai	nsects, il	mportant feature	s, etc.
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes X No Yes X No	Is the Sampled Area within a Wetland?	Yes X	No	

Hydric Soil Present?	Yes X No	within a Wetland? Yes X No
Wetland Hydrology Present?	Yes X No	If yes, optional Wetland Site ID: Impact Area B
Remarks: (Explain alternative procedures	s here or in a separate report.)	

Wetland Hydrology Indicators:			Secondary Indicators (minimu	um of two required)	
Primary Indicators (minimum of one is require	ed; check all that apply)		Surface Soil Cracks (B6)		
Surface Water (A1)	Drainage Patterns (B10)				
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)		Dry-Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burrows (C8)		
Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Ro	oots (C3)	Saturation Visible on Aer	ial Imagery (C9)	
Drift Deposits (B3)	Presence of Reduced Iron (C4)		Stunted or Stressed Plan	ts (D1)	
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soil	s (C6)	Geomorphic Position (D2	2)	
Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)		Microtopographic Relief (D4)	
Sparsely Vegetated Concave Surface (B	8)		X FAC-Neutral Test (D5)		
Field Observations:					
Surface Water Present? Yes	No X Depth (inches):				
Water Table Dresent?	No X Dopth (inchos):				
Water rable Present? res					
Saturation Present? Yes	No X Depth (inches):	Wetlan	nd Hydrology Present?	Yes X No	
Saturation Present? Yes (includes capillary fringe)	No X Depth (inches):	Wetlan	nd Hydrology Present?	Yes X No	
Vale Table Present? Tes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monocomplete)	No X Depth (inches):	Wetlan	nd Hydrology Present? available:	Yes <u>X</u> No	
Vale Table Present? res Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, more	No X Depth (inches):	Wetlan ections), if	nd Hydrology Present? available:	Yes <u>X</u> No	
Valer Table Present? res Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monopole	No X Depth (inches):	Wetlan ections), if	nd Hydrology Present? available:	Yes <u>X</u> No	
Valer Table Present? Yes Saturation Present? Yes (includes capillary fringe)	No X Depth (inches):	Wetlan	nd Hydrology Present? available:	Yes <u>X</u> No	
Valer Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, model Remarks: Remarks:	No X Depth (inches):	Wetlan ections), if	nd Hydrology Present? available:	Yes <u>X</u> No	
Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monormality fringe) Remarks: Remarks:	No X Depth (inches):	Wetlan ections), if	nd Hydrology Present? available:	Yes <u>X</u> No	
Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	No X Depth (inches):	Wetlan	nd Hydrology Present? available:	Yes <u>X</u> No	
Valer Fable Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monormality) Remarks: Remarks:	No X Depth (inches):	Wetlan	nd Hydrology Present? available:	Yes <u>X</u> No	
Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monormality) Describe Recorded Data (stream gauge, monormality) Remarks:	No X Depth (inches):	Wetlan	nd Hydrology Present? available:	Yes <u>X</u> No	
Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, model Remarks: Remarks:	No X Depth (inches):	Wetlan ections), if	nd Hydrology Present? available:	Yes <u>X</u> No	
Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monormality fringe) Remarks: Remarks:	No X Depth (inches):	Wetlan	nd Hydrology Present? available:	Yes <u>X</u> No	
Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, monormality fringe) Describe Recorded Data (stream gauge, monormality fringe) Remarks:	No X Depth (inches):	Wetlan	nd Hydrology Present? available:	Yes <u>X</u> No	

Sampling Point: B_WET

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size:)	% Cover	Species?	Status	Dominance Test worksheet:
1. Acer rubrum	45	Yes	FAC	Number of Dominant Species
2. Pinus strobus	5	No	FACU	That Are OBL, FACW, or FAC: <u>5</u> (A)
 <u>Betula lenta</u> 4. 	5	No	FACU	Total Number of Dominant Species Across All Strata: 5 (B)
5.				
6.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
7				Prevalence Index worksheet:
	55	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species 0 x 1 = 0
1. Frangula alnus	5	Yes	FAC	FACW species 7 x 2 = 14
2. Ilex verticillata	5	Yes	FACW	FAC species 60 x 3 = 180
3. Euonymus alatus	2	No	UPL	FACU species 14 x 4 = 56
4. Pinus strobus	2	No	FACU	UPL species 6 x 5 = 30
5.				Column Totals: 87 (A) 280 (B)
6.				Prevalence Index = $B/A = 3.22$
7.				Hydrophytic Vegetation Indicators:
	14	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				X 2 - Dominance Test is >50%
1. Osmundastrum cinnamomeum	2	No	FACW	3 - Prevalence Index is ≤3.0 ¹
2. Carex pensylvanica	2	No	UPI	4 - Morphological Adaptations ¹ (Provide supporting
3. Mitchella repens	2	No	FACU	data in Remarks or on a separate sheet)
4 Toxicodendron radicans		Yes	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
5 Dryonteris intermedia	5	Yes	FAC	
6. Brachvelvtrum aristosum	2	No	UPL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7.				Definitions of Vegetation Strata:
8.				
9.				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
10.				Septime/shrub Woody plants loss than 2 in DPH
11.				and greater than or equal to 3.28 ft (1 m) tall.
12.				
	18	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				
3				Hydrophytic Vegetation
4				Present? Yes X No
		=Total Cover		
Remarks: (Include photo numbers here or on a separ	ate sheet.)			•

Profile Desc	cription: (Describe	to the dep	oth needed to doc	ument t	he indica	ator or co	onfirm the absence of i	ndicators.)
Depth	Matrix		Redo	x Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-9	10yr 2/1	98		. <u> </u>			Sandy	ox rhizo
9-12	10yr 4/1	98	7.5yr 3/3	2	С	М	Sandy	
12-18	2.5y 5/2	8	10yr 4/6	20	С	М	Sandy	
				·				
				. <u> </u>				
¹ Tvpe: C=C	oncentration. D=Dep	letion. RM	=Reduced Matrix.	MS=Mas	ked Sano	d Grains.	² Location: PL=	=Pore Lining, M=Matrix,
Hydric Soil	Indicators:	,	,				Indicators for	Problematic Hydric Soils ³ :
Histosol	(A1)		Polyvalue Belo	ow Surfa	ce (S8) (LRR R,	2 cm Mucł	(A10) (LRR K, L, MLRA 149B)
Histic Ep	pipedon (A2)		MLRA 149E	3)			Coast Prai	irie Redox (A16) (LRR K, L, R)
Black Hi	istic (A3)		Thin Dark Sur	face (S9) (LRR R	, MLRA 1	149B) 5 cm Mucł	vy Peat or Peat (S3) (LRR K, L, R)
Hydroge	en Sulfide (A4)		High Chroma	Sands (S	611) (LR I	R K, L)	Polyvalue	Below Surface (S8) (LRR K, L)
Stratified	d Layers (A5)		Loamy Mucky	Mineral	(F1) (LR	R K, L)	Thin Dark	Surface (S9) (LRR K, L)
X Depleted	d Below Dark Surface	e (A11)	Loamy Gleyed	l Matrix (F2)		Iron-Mang	anese Masses (F12) (LRR K, L, R)
Thick Da	ark Surface (A12)		Depleted Matr	ix (F3)			Piedmont	Floodplain Soils (F19) (MLRA 149B)
Sandy N	lucky Mineral (S1)		Redox Dark S	urface (F	-6)		Mesic Spo	odic (TA6) (MLRA 144A, 145, 149B)
Sandy G	Bleyed Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Paren	nt Material (F21)
Sandy R	Redox (S5)		Redox Depres	sions (F	8)		Very Shall	ow Dark Surface (F22)
Stripped	l Matrix (S6)		Marl (F10) (LR	RR K, L)			Other (Exp	blain in Remarks)
Dark Su	nace (S7)							
³ Indicators o	f hydrophytic vegetat	tion and w	etland hydrology m	ust be pi	resent, u	nless dist	urbed or problematic.	
Restrictive	Layer (if observed):							
lype:								
Depth (ii	nches):						Hydric Soil Present	? Yes <u>X</u> No
Remarks:		with a surface l					0.0 to be dealer the NDOG	
Version 7.0.	2015 Errata, (http://w	vww.nrcs.u	usda.gov/Internet/F	SF DO	DUMENT	S/nrcs14	2.0 to include the NRCS 2p2 051293.docx)	5 Field Indicators of Hydric Solis,
			<u>j</u>				1,	

Project/Site: Hudson Logistics Center	City/County: Hudson Sampling Date: 12/2/20
Applicant/Owner: Hillwood Development	State: NH Sampling Point: B2_UPL
Investigator(s): Brendan Quigley, Gove Environmental Services	Section, Township, Range:
Landform (hillside, terrace, etc.): Lower Merrimack River Valley Lower Merrimack River Valley	ocal relief (concave, convex, none): convex Slope %:
Subregion (LRR or MLRA): LRR R Lat: see map	Long: Datum:
Soil Map Unit Name:	NWI classification: PFO1B
Are climatic / hydrologic conditions on the site typical for this time of year	ar? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly d	isturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrologynaturally prob	lematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing s	sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area
Hydric Soil Present?	Yes	No X	within a Wetland? Yes No X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID: Impact Area B
Remarks: (Explain alternative procedures	here or in a s	eparate report.)	·

Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) Water-Stained Leaves (B9) Drainage Patterns (B10) High Water Table (A2) Aquatic Fauna (B13) Moss Trim Lines (B16) Saturation (A3) Marl Deposits (B15) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Surface Water (A1)Water-Stained Leaves (B9)Drainage Patterns (B10)High Water Table (A2)Aquatic Fauna (B13)Moss Trim Lines (B16)Saturation (A3)Marl Deposits (B15)Dry-Season Water Table (C2)Water Marks (B1)Hydrogen Sulfide Odor (C1)Crayfish Burrows (C8)Sediment Deposits (B2)Oxidized Rhizospheres on Living Roots (C3)Saturation Visible on Aerial Imagery (C9)Drift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed Plants (D1)Algal Mat or Crust (B4)Recent Iron Reduction in Tilled Soils (C6)Geomorphic Position (D2)Iron Deposits (B5)Thin Muck Surface (C7)Shallow Aquitard (D3)Inundation Visible on Aerial Imagery (B7)Other (Explain in Remarks)Microtopographic Relief (D4)
High Water Table (A2) Aquatic Fauna (B13) Moss Trim Lines (B16) Saturation (A3) Marl Deposits (B15) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Saturation (A3) Marl Deposits (B15) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Iron Deposits (B5) Thin Muck Surface (C7) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8) FAC-Neutral Test (D5)
Field Observations:
Surface Water Present? Yes No X Depth (inches):
Water Table Present? Yes No X Depth (inches):
Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No X
(includes capillary fringe)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:

Sampling Point: B2_UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Pinus strobus	65	Yes	FACU	
2. Betula lenta	10	No	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
3 Acer rubrum	5	No	FAC	
4				Total Number of Dominant Species Across All Strata: 5 (B)
5				Percent of Dominant Species
7				Provolonce Index worksheet:
<i>I</i>	80	-Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				$\begin{array}{c c} \hline & & \\ \hline & & \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\$
1. Quercus rubra	5	Yes	FACU	FACW species 5 x 2 = 10
2. Prunus serotina	2	Yes	FACU	FAC species 7 x 3 = 21
3.				FACU species 82 x 4 = 328
4.				UPL species 0 x 5 = 0
5.				Column Totals: 94 (A) 359 (B)
6.				Prevalence Index = $B/A = 3.82$
7.				Hydrophytic Vegetation Indicators:
	7	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				2 - Dominance Test is >50%
1. Osmundastrum cinnamomeum	5	Yes	FACW	3 - Prevalence Index is ≤3.0 ¹
2. Dryopteris intermedia	2	Yes	FAC	4 - Morphological Adaptations ¹ (Provide supporting
3.				data in Remarks or on a separate sheet)
4.				Problematic Hydrophytic Vegetation ¹ (Explain)
5.				
6.				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7.				Definitions of Vegetation Strata:
8.				Tree – Woody plants 3 in (7.6 cm) or more in
9.				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12.	7	=Total Cover		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				
, 1.				Woody vines – All woody vines greater than 3.28 ft in height.
2.				
3.				Hydrophytic
4.				Vegetation Present? Yes No X
		=Total Cover		
Remarks: (Include photo numbers here or on a separ	ate sheet.)			
	···· · · · ,			

L

Depth	Matrix		Redo	x Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-5	10yr 2/1						Sandy	
5-9	10yr 3/2						Sandy	
9-17	10yr 4/4						Sandy	
						·		
·						·		
·						·		
						·		
¹ Type: C=Con	centration, D=Deple	tion. RM	=Reduced Matrix. N	/S=Mas	ked Sand	Grains	2 l ocation: PI =P	ore Lining, M=Matrix
Hydric Soil In	dicators:					oranio.	Indicators for Pr	oblematic Hydric Soils ³ :
Histosol (A Histic Epip Black Histi Hydrogen Stratified L Depleted E Thick Dark Sandy Muc Sandy Gle Sandy Rec Stripped M Dark Surfa	A1) pedon (A2) ic (A3) Sulfide (A4) Layers (A5) Below Dark Surface & Surface (A12) cky Mineral (S1) eyed Matrix (S4) dox (S5) Matrix (S6) mace (S7) Advisor Supervisor Supervis	(A11) on and w	Polyvalue Belo MLRA 149B Thin Dark Surf High Chroma S Loamy Mucky Loamy Gleyed Depleted Matri Redox Dark Su Depleted Dark Redox Deprese Marl (F10) (LR	w Surfa) ace (S9 Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F R K, L) ust be p	ce (S8) (L) (LRR R, S11) (LRR (F1) (LRF (F1) (LRF F2) 56) 56) 56) 8) resent, un	RR R, MLRA 1 K, L) K, L)	49B) 2 cm Muck (/ Coast Prairie Polyvalue Be Thin Dark Su Iron-Mangan Piedmont Flo Mesic Spodio Red Parent M Very Shallow Other (Explai	A10) (LRR K, L, MLRA 149B) Redox (A16) (LRR K, L, R) Peat or Peat (S3) (LRR K, L, R) low Surface (S8) (LRR K, L) rface (S9) (LRR K, L) ese Masses (F12) (LRR K, L, R) odplain Soils (F19) (MLRA 149E c (TA6) (MLRA 144A, 145, 149B Material (F21) Dark Surface (F22) n in Remarks)
Restrictive La	yer (if observed):							
Type: Depth (inc	hes).						Hydric Soil Present?	Yes No X
Remarks:							.,	
This data form Version 7.0, 20	is revised from Nort 015 Errata. (http://wv	hcentral w.nrcs.ι	and Northeast Reg usda.gov/Internet/F	ional Su SE_DOC	pplement CUMENTS	Version S/nrcs142	2.0 to include the NRCS F 2p2_051293.docx)	ield Indicators of Hydric Soils,

Project/Site: Hudson Logistics Center	City/County: Hudson Sampling Date: 12/2/20
Applicant/Owner: Hillwood Development	State: NH Sampling Point: C_UPL
Investigator(s): Brendan Quigley, Gove Environmental Services	Section, Township, Range:
Landform (hillside, terrace, etc.): Lower Merrimack River Valley Loca	I relief (concave, convex, none): <u>convex</u> Slope %:
Subregion (LRR or MLRA): LRR R Lat: see map	Long: Datum:
Soil Map Unit Name:	NWI classification: PFO1B
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly distu	urbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrologynaturally problem	natic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sar	npling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X If yes, optional Wetland Site ID: Impact Area C
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	
Remarks: (Explain alternative procedu	ires here or in a	separate report.)	

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is requir	ed; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B	8)	FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes	No X Depth (inches):	
Water Table Present? Yes	No X Depth (inches):	
Saturation Present? Yes	No X Depth (inches): Wetla	and Hydrology Present? Yes No X
(includes capillary fringe)		
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspections),	if available:
Remarks:		

Sampling Point: C_UPL

	Absolute	Dominant	Indicator	
<u>Tree Stratum</u> (Plot size:)	% Cover	Species?	Status	Dominance Test worksheet:
1. Pinus strobus	40	Yes	FACU	Number of Dominant Species
2. Quercus rubra	10	No	FACU	That Are OBL, FACW, or FAC:(A)
3. <u>Betula lenta</u>	20	Yes	FACU	Total Number of Dominant
4. Acer rubrum	2	No	FAC	Species Across All Strata:4 (B)
5				Percent of Dominant Species
6				That Are OBL, FACW, or FAC: 25.0% (A/B)
7				Prevalence Index worksheet:
	72	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species 0 x 1 = 0
1. Crataegus crus-galli	5	Yes	FAC	FACW species 2 x 2 = 4
2				FAC species 7 x 3 = 21
3				FACU species 70 x 4 = 280
4				UPL species 20 x 5 = 100
5.				Column Totals: 99 (A) 405 (B)
6.				Prevalence Index = $B/A = 4.09$
7.		·		Hydrophytic Vegetation Indicators:
	5	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:				2 - Dominance Test is >50%
1 Osmundastrum cinnamomeum	2	No	FACW	$3 = \text{Prevalence Index is } \le 3 \text{ 0}^1$
Donnetoodtio punctilopulo	20	Voo		4 - Morphological Adaptations ¹ (Provide supporting
	20	165	UFL	data in Remarks or on a separate sheet)
3				
4.		·		Problematic Hydrophytic Vegetation (Explain)
5		·		¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
7		. <u> </u>		Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10		<u></u>		Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	22	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines - All woody vines greater than 3 28 ft in
1.				height.
2.				
3.				Hydrophytic Venetation
4.		·		Present? Yes No X
		=Total Cover		
Remarks: (Include photo numbers here or on a sena	arate sheet)			

Depth Ma	atrix	Redo	x Featu	res		,
(inches) Color (mo	ist) %	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-2 10yr 2/1	<u> </u>					Sandy
2-6 10yr 4/4	<u> </u>					Sandy
6-13 10yr 5/4	<u> </u>					Sandy
¹ Type: C=Concentration, D	=Depletion, RM	1=Reduced Matrix, N	/IS=Mas	ked Sand	d Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:				aa (CO) (Indicators for Problematic Hydric Soils ³ :
Histosol (A1)			w Suna	ce (58) (LKK K,	2 cm Muck (A10) (LRR K, L, MLRA 1498
		WILKA 1490) 			140P) 5 or Music Post of Post (S2) (LRR K, L, K)
Black Histic (A3)			ace (59			149B) 5 cm Mucky Peat of Peat (S3) (LRR K, L
Hydrogen Sulfide (A4)		High Chroma	Sands (S	511) (LRI	(K, L)	Polyvalue Below Sufface (S8) (LRR K, L)
Stratified Layers (A5)		Loamy Mucky	Mineral	(F1) (LR ∣	Κ, L)	Thin Dark Surface (S9) (LRR K, L)
Depleted Below Dark S	Surface (A11)	Loamy Gleyed	Matrix ((F2)		Iron-Manganese Masses (F12) (LRR K, L
Thick Dark Surface (A1	2)	Depleted Matri	x (F3)			Piedmont Floodplain Soils (F19) (MLRA 1
Sandy Mucky Mineral (S1)	Redox Dark Su	urface (F	-6)		Mesic Spodic (TA6) (MLRA 144A, 145, 1 4
Sandy Gleyed Matrix (S	64)	Depleted Dark	Surface	e (F7)		Red Parent Material (F21)
Sandy Redox (S5)		Redox Depres	sions (F	8)		Very Shallow Dark Surface (F22)
Stripped Matrix (S6)		Marl (F10) (LR	R K, L)			Other (Explain in Remarks)
Dark Surface (S7)						
³ Indicators of hydrophytic v	egetation and w	vetland hydrology mu	ust be p	resent, ur	nless dist	turbed or problematic.
Restrictive Layer (if obser	ved):					
Туре:						
Depth (inches):						Hydric Soil Present? Yes No X
Remarks:						-
This data form is revised from	om Northcentra	and Northeast Reg	ional Su	ıpplemen	t Version	2.0 to include the NRCS Field Indicators of Hydric Soils
Version 7.0, 2015 Errata. (r	http://www.nrcs.	usda.gov/Internet/F	SE_DO	JUMENT	S/nrcs14	f2p2_051293.docx)

Project/Site: Hudson	Logistics Ce	nter			City/C	ounty: <u>H</u> u	udson			Sampling Date:	12/2/20
Applicant/Owner:	Hillwood Dev	velopment						State	NH	Sampling Point	C_WET
Investigator(s): Brend	lan Quigley, (Gove Environme	ntal S	Services		Sectior	n, Town	ship, Range:			
Landform (hillside, terr	ace, etc.):	Lower Merrimac	k Riv	er Valley	Local relief (c	oncave, c	convex,	none): <u>conca</u>	ave	Slope	%:
Subregion (LRR or ML	.RA): <u>LRR</u>	R	Lat:	see map		L	ong:			Datum:	
Soil Map Unit Name:NWI classification: PFO1B											
Are climatic / hydrolog	ic conditions	on the site typica	al for	this time of	f year?	Yes	Х	No	(If no,	explain in Remarks	5.)
Are Vegetation	, Soil	, or Hydrology		significant	tly disturbed?	Are '	"Normal	Circumstand	ces" pres	sent? Yes X	No
Are Vegetation	, Soil	, or Hydrology		naturally p	problematic?	(lf ne	eeded, e	explain any a	nswers i	n Remarks.)	
SUMMARY OF FI	NDINGS -	- Attach site	map	showin	g sampling	point lo	ocatio	ns, transe	ects, in	nportant featur	es, etc.
Hydrophytic Vegetatio	on Present?	Yes	х	No	ls th	e Sampl	ed Area	1			
Hydric Soil Present?		Yes	Х	No	with	in a Wet	land?	Ye	s <u>X</u>	No	
Wetland Hydrology P	resent?	Yes	Х	No	If ye	s, optiona	al Wetla	nd Site ID:	Impact	Area C	_
Remarks: (Explain al	Iternative pro	cedures here or i	in a s	eparate rep	port.)						

Wetland Hydrology Indica	tors:				Secondary Indicators (minimum of two required)
Primary Indicators (minimu	<u>n of one is requir</u>	Surface Soil Cracks (B6)			
Surface Water (A1)		Drainage Patterns (B10)			
High Water Table (A2)		Aquati	c Fauna (B13)		Moss Trim Lines (B16)
Saturation (A3)		Marl D	eposits (B15)		Dry-Season Water Table (C2)
Water Marks (B1)		Hydrog	gen Sulfide Odor (C1)		Crayfish Burrows (C8)
Sediment Deposits (B2)	X Oxidize	ed Rhizospheres on Living R	oots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)		Preser	nce of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)		Recen	t Iron Reduction in Tilled Soil	s (C6)	X Geomorphic Position (D2)
Iron Deposits (B5)		Thin M	luck Surface (C7)		Shallow Aquitard (D3)
Inundation Visible on A	erial Imagery (B7) Other	(Explain in Remarks)		Microtopographic Relief (D4)
Sparsely Vegetated Co	ncave Surface (B	88)			FAC-Neutral Test (D5)
Field Observations:					
Surface Water Present?	Yes	No X	Depth (inches):		
Water Table Present?	Yes	No X	Depth (inches):		
Saturation Present?	Yes	No X	Depth (inches):	Wetlar	nd Hydrology Present? Yes X No
(includes capillary fringe)					
Describe Recorded Data (s	ream gauge, mo	nitoring well,	aerial photos, previous inspe	ections), if	available:
Pemarks:					
Remarks.					

Sampling Point: C_WET

Tree Stratum (Plot size: width of wet)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	20	Yes	FAC	
2.				Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
3.				
4.				Total Number of Dominant Species Across All Strata: 3 (B)
5.				(=)
6.				Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)
7.				Prevalence Index worksheet:
	20	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: width of wet)				OBL species 0 $x 1 = 0$
1.				FACW species 5 $x 2 = 10$
2.				FAC species $20 \times 3 = 60$
3.				FACU species 5 $x 4 = 20$
4.				UPL species $0 \times 5 = 0$
5.				Column Totals: 30 (A) 90 (B)
6.				Prevalence Index = $B/A = 3.00$
7.				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5'r)				X 2 - Dominance Test is >50%
1. Osmundastrum cinnamomeum	5	Yes	FACW	X 3 - Prevalence Index is ≤3.0 ¹
2. Gaultheria procumbens	5	Yes	FACU	4 - Morphological Adaptations ¹ (Provide supporting
3.				data in Remarks or on a separate sheet)
4.				Problematic Hydrophytic Vegetation ¹ (Explain)
5.				
6.				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7.				Definitions of Vegetation Strata:
8.				
9.				diameter at breast height (DBH), regardless of height.
10.				Oralia afekarak - Weederster terretiker Olio DDU
11.				and greater than or equal to 3.28 ft (1 m) tall.
12.				
	10	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				We during All we during suctor than 2.20 ft is
1.				height.
2.				
3.				Hydrophytic Vogetation
4.				Present? Yes X No
		=Total Cover		
Remarks: (Include photo numbers here or on a sepa	rate sheet.)			
narrow wetland area. Tree and shub plots adjusted to	wid of wetka	and (~15' wide))	

SOIL	
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Profile Desc	ription: (Describe	to the dep	oth needed to doc	ument t	he indica	tor or co	onfirm the absence of ind	icators.)	
Depth	Matrix		Redo	x Featur	es				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-8	10yr 2/1	100					Sandy	ox rhizo	
8-10	10yr 4/1	98	7.5yr 3/3	2	С	М	Sandy		
10-15	2.5y 5/2	95	10yr 5/6	5	С	Μ	Sandy		
·									
		·							
¹ Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix, N	/IS=Mas	ked Sand	l Grains.	² Location: PL=Po	ore Lining, M=Matrix.	
Hydric Soil I	Indicators:						Indicators for Pr	oblematic Hydric Soils ³ :	
Histosol	(A1)		Polyvalue Belo	ow Surfa	ce (S8) (I	LRR R,	2 cm Muck (A	A10) (LRR K, L, MLRA 149B)	
Histic Ep	oipedon (A2)		MLRA 149B	5)			Coast Prairie	Redox (A16) (LRR K, L, R)	
Black His	stic (A3)		Thin Dark Surf	ace (S9) (LRR R	MLRA 1	5 cm Mucky	Peat or Peat (S3) (LRR K, L, R)	
Hydroge	n Sulfide (A4)		High Chroma S	Sands (S	611) (LRF	R K, L)	Polyvalue Below Surface (S8) (LRR K, L)		
Stratified	d Layers (A5)		Loamy Mucky	Mineral	(F1) (LRI	R K, L)	Thin Dark Surface (S9) (LRR K, L)		
X Depleted	d Below Dark Surface	e (A11)	Loamy Gleyed	Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)		
Thick Da	ark Surface (A12)		Depleted Matri	x (F3)			Piedmont Floodplain Soils (F19) (MLRA 149B)		
Sandy M	lucky Mineral (S1)		Redox Dark Su	urface (F	-6)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
Sandy G	bleyed Matrix (S4)		Depleted Dark	Surrace	e (F7)		Red Parent Material (F21)		
Sandy R	edox (SS)		Mart (E10) (LB		8)		Other (Explain in Remarks)		
Supped	rfaaa (87)		IMAII (F 10) (LK	κ κ, L)					
	nace (37)								
³ Indicators of	f hydrophytic yegetat	tion and w	etland bydrology m	ust he n	recent ur	loce diet	urbed or problematic		
Restrictive I	aver (if observed):		cliand hydrology m		icsent, u	1033 0130			
Type:									
Depth (ir	nches):						Hydric Soil Present?	Yes <u>X</u> No	
Remarks:							1		
This data for	m is revised from No	orthcentral	and Northeast Reg	ional Su	pplemen	Version	2.0 to include the NRCS F	ield Indicators of Hydric Soils,	
Version 7.0,	2015 Errata. (http://w	www.nrcs.u	usda.gov/Internet/F	SE_DOO	CUMENT	S/nrcs14	2p2_051293.docx)		

Project/Site: Hudson Logistics Center	City/County: Hudson Sampling Date: 12/2/20
Applicant/Owner: Hillwood Development	State: NH Sampling Point: D-C_UP
Investigator(s): Brendan Quigley, Gove Environmental Services	Section, Township, Range:
Landform (hillside, terrace, etc.): Lower Merrimack River Valley	Local relief (concave, convex, none): convex Slope %:
Subregion (LRR or MLRA): LRR R Lat: see map	Long: Datum:
Soil Map Unit Name:	NWI classification: PFO1B
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly	disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrologynaturally prof	blematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area				
Wetland Hydrology Present?	Yes		If yes, optional Wetland Site ID: Impact Area C & D				

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one i	s required; check all that apply)	Surface Soil Cracks (B6)		
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)		
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3)	Marl Deposits (B15)	Dry-Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imag	Jery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Su	rface (B8)	FAC-Neutral Test (D5)		
Field Observations:				
Surface Water Present? Yes	No X Depth (inches):			
Water Table Present? Yes	No X Depth (inches):			
Saturation Present? Yes	No X Depth (inches): Wetla	nd Hydrology Present? Yes No X		
(includes capillary fringe)				
Describe Recorded Data (stream gau	ige, monitoring well, aerial photos, previous inspections), if	available:		
Remarks:				

Sampling Point: D-C_UPL

	Absolute	Dominant	Indicator	Deminence Test workshort
<u>Tree Stratum</u> (Plot size: <u>15 x30</u>)	% Cover	Species?	Status	Dominance Test Worksneet:
1. Pinus strobus	20	Yes	FACU	Number of Dominant Species
2. Quercus rubra	20	Yes	FACU	That Are OBL, FACW, or FAC:(A)
3. Betula lenta 4.	10	Yes	FACU	Total Number of Dominant Species Across All Strata: 5 (B)
5		·		Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)
7				Prevalence Index worksheet:
	50	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15'x15')				OBL species 0 x 1 = 0
1. <u>Betula lenta</u>	10	Yes	FACU	FACW species 2 x 2 = 4
2. Acer rubrum	5	Yes	FAC	FAC species 5 x 3 = 15
3. Pinus strobus	2	No	FACU	FACU species 62 x 4 = 248
4.				UPL species 0 x 5 = 0
5.				Column Totals: 69 (A) 267 (B)
6.				Prevalence Index = $B/A = 3.87$
7.				Hydrophytic Vegetation Indicators:
	17	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5'r)				2 - Dominance Test is >50%
1 Osmundastrum cinnamomeum	2	No	FACW	3 - Prevalence Index is <3.01
2			17.077	4 - Morphological Adaptations ¹ (Provide supporting
2		·		data in Remarks or on a separate sheet)
		·		Problematic Undranduntic Magatation ¹ (Evaluin)
4				
5		·		¹ Indicators of hydric soil and wetland hydrology must
o		·		De present, unless disturbed of problematic.
/		·		Definitions of vegetation Strata:
8 9				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
10 11		·		Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	2	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:) 1.				Woody vines – All woody vines greater than 3.28 ft in height.
2.				
3.				Hydrophytic
4.		·		Present? Yes No X
		=Total Cover		
Remarks: (Include photo numbers here or on a sena	rate sheet)			
tree and shrub lots adjusyted to the width of narrow u	pland area -	~15'		

SOIL	
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Profile Desc	ription: (Describe	to the dep	oth needed to docu	ument t	he indica	ator or co	onfirm the absence of ind	icators.)			
Depth	Matrix		Redo	x Featur	es						
(inches)	Color (moist)	%	Color (moist)	%	Type'	Loc ²	Texture	Remarks			
0-4	10yr 2/1	100					Sandy				
4-14	7.5yr 2.5/2	100					Sandy				
14-230	10yr 4/3	90	10yr 3/6	10			Sandy				
							·				
1											
'Type: C=Co	ncentration, D=Dep	letion, RM	=Reduced Matrix, N	MS=Mas	ked Sand	d Grains.	² Location: PL=Po	pre Lining, M=Matrix.			
Hydric Soil I	ndicators:			~ ′	(00) (Indicators for Pr	oblematic Hydric Soils":			
Histosol	(A1)		Polyvalue Belo	ow Surfa	ce (S8) (I	LRR R,	2 cm Muck (A	(10) (LRR K, L, MLRA 149B)			
Histic Ep	Ipedon (A2)		MLRA 149B	5) (20)				Redox (A16) (LRR K, L, R)			
	STIC(A3)	•		ace (59)				Peat of Peat (S3) (LRR K, L, R)			
Stratified				Minoral	/E1) (LRF	х к , L)	Thin Dark Su	r_{1}			
Stratilieu	Layers (AS) Below Dark Surface	- (A11)		Matrix ((F1) (LKI F2)	κ κ , ι)		$(\mathbf{L}\mathbf{R}\mathbf{R}\mathbf{R},\mathbf{L})$			
Depleted	rk Surface (A12)	e (ATT)	Loany Gleyeu	i Wallix (iv (E3)	12)			(F12) (LKK K, L, K)			
Sandy M	ucky Mineral (S1)		Bedox Dark Si	urface (F	6)		Mesic Spodic	(TA6) (MI RA 144A 145 149B)			
Sandy G	leved Matrix (S4)	•	Depleted Dark	Surface	e (F7)		Red Parent M	(1) (e) (112 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)			
Sandy Re	edox (S5)	•	Redox Depres	sions (F	8)		Verv Shallow	Dark Surface (F22)			
Stripped	Matrix (S6)		Marl (F10) (LR	RK,L)	- /		Other (Explain in Remarks)				
Dark Sur	face (S7)	•		. ,			、 、	,			
³ Indicators of	hydrophytic vegetat	tion and we	etland hydrology mi	ust be pi	resent, ur	nless dist	urbed or problematic.				
Restrictive L	ayer (if observed):										
Туре:											
Depth (in	ches):						Hydric Soil Present?	Yes No X			
Remarks:											
This data forr	n is revised from No	orthcentral	and Northeast Reg	jional Su	pplemen	t Version	2.0 to include the NRCS F	eld Indicators of Hydric Soils,			
Version 7.0, 2	2015 Errata. (http://v	vww.nrcs.u	usda.gov/Internet/F	SE_DOO	CUMENT	S/nrcs14	2p2_051293.docx)				

Project/Site: Hudson Logistics Ce	Idson Logistics Center City/County: Hudson S								
Applicant/Owner: Hillwood De	velopment	Sta	te: <u>NH</u>	Sampling Point: D_WET					
Investigator(s): Brendan Quigley,	Gove Environmental Services	Section, Township, Rang	je:						
Landform (hillside, terrace, etc.):	Lower Merrimack River Valley	Local relief (concave, convex, none): <u>co</u>	ncave	Slope %:					
Subregion (LRR or MLRA): LRR	R Lat: see map	Long:		Datum:					
Soil Map Unit Name:	Soil Map Unit Name:NWI classification: PFO1B								
Are climatic / hydrologic conditions	on the site typical for this time of y	ear? Yes <u>X</u> No	(If no,	explain in Remarks.)					
Are Vegetation, Soil	, or Hydrologysignificantly	disturbed? Are "Normal Circumsta	ances" pre	sent? Yes X No					
Are Vegetation, Soil	, or Hydrologynaturally pro	blematic? (If needed, explain any	answers i	in Remarks.)					
SUMMARY OF FINDINGS -	 Attach site map showing 	sampling point locations, tran	sects, ir	nportant features, etc.					
Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area							
Hydric Soil Present?	Yes X No	within a Wetland?	res <u>X</u>	No					
Wetland Hydrology Present?	Yes X No	If yes, optional Wetland Site ID	Impact	Area D					
Remarks: (Explain alternative pro	cedures here or in a separate repo	rt.)							

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)							
Primary Indicators (minimum of one is require	Surface Soil Cracks (B6)							
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)						
X High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lines (B16)					
X Saturation (A3)	Marl Deposits (B15)		Dry-Season Water Table (C2)					
Water Marks (B1)	Hydrogen Sulfide Odor (C1)		Crayfish Burrows (C8)					
Sediment Deposits (B2)	Oxidized Rhizospheres on Living R	oots (C3)	Saturation Visible on Aerial Imagery (C9)					
Drift Deposits (B3)	Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)					
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soi	ls (C6)	X Geomorphic Position (D2)					
Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquitard (D3)					
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)		Microtopographic Relief (D4)					
Sparsely Vegetated Concave Surface (B8	8)		X FAC-Neutral Test (D5)					
Field Observations:								
Surface Water Present? Yes	No X Depth (inches):							
Water Table Present? Yes X	No Depth (inches): 8							
Saturation Present? Yes X	No Depth (inches): 0	Wetlan	d Hydrology Present? Yes X No					
(includes capillary fringe)								
Describe Recorded Data (stream gauge, mon	nitoring well, aerial photos, previous insp	ections), if	available:					
Remarks:								

Sampling Point: D_WET

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u> 2.	20	Yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
3				Total Number of Dominant Species Across All Strata: 4 (B)
5				Percent of Dominant Species
7				Prevalence Index worksheet:
··	20	-Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15'r)	20			$\frac{1}{\text{OBL species}} 5 \qquad x 1 = 5$
1. Vaccinium corymbosum	5	Yes	FACW	FACW species 20 x 2 = 40
2.				FAC species 20 x 3 = 60
3.				FACU species $0 x 4 = 0$
4				$\frac{1}{1}$
5				$\frac{1}{2} = \frac{1}{2} = \frac{1}$
				$\frac{1}{100} = \frac{1}{100} = \frac{1}$
0				Hudronhutia Vacatatian Indiaatara
/				Hydrophytic vegetation indicators:
	5	= I otal Cover		1 - Rapid Test for Hydrophytic Vegetation
<u>Herb Stratum</u> (Plot size: <u>5'r</u>)				X 2 - Dominance Test is >50%
1. Impatiens capensis	15	Yes	FACW	X 3 - Prevalence Index is ≤3.0'
2. Symplocarpus foetidus	5	Yes	OBL	4 - Morphological Adaptations ¹ (Provide supporting
3. UKN carex	2	No		data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6.				be present, unless disturbed or problematic.
7.				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in (7.6 cm) or more in
9.				diameter at breast height (DBH), regardless of height.
10.				Continue Alexandre Manada lang than 2 in DDU
11				and greater than or equal to 3.28 ft (1 m) tall.
12	22	=Total Cover		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				Hedrowled's
3				Hydropnytic Vegetation
4				Present? Yes X No
		=Total Cover		
Remarks: (Include photo numbers here or on a sepa	arate sheet.)			

Profile Desc	ription: (Describe	to the de	pth needed to docu	ument ti	he indica	tor or co	onfirm the absence	of indicators.)
Depth	Matrix		Redo	x Featur	res			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-20	2 5v 2 5/1	100					Muck	ox rhizo
	2.09 2.07 1						Mdolt	OX THEO
		otion RM			kod Sono		² Logation:	
	ncentration, D=Depi	ellon, Riv		/15=1vias	keu Sano	Grains.	Location. I	PL=Pore Lining, M=Matrix.
Y Histosol			Polyaduo Bolo		co (S9) (I			
	(AI) inodon (A2)			w Suna \	Ce (30) (I			
Block His	(A2)		Thin Dark Surf) 200 (SQ)		MIDA	Cuast F	lucky Post or Post (S2) (IPP K I P)
Black The	Suc (AS) $Sulfide (AA)$		High Chroma	ace (39) Sande (9) (LKK K) S11) (I P E		149B) 5 CII M	ue Below Surface (S8) (I PP K I)
Tryurogen			Loamy Mucky	Minoral	(E1) (L RI	, , , , ,	T Olyvan Thin Da	ark Surface (SQ) (LRR K , L)
Oralined	Below Dark Surface	(A11)	Loamy Gleved	Matrix ((I I) (EIXI (E2)	、 ∩, ∟)	Iron-Ma	
	rk Surface (A12)	; (ATT)	Loany Oleyeu	v (E3)	(1 2)		Niedmo	anganese masses (112) (ERR R, E, R)
Sandy M	ucky Mineral (S1)		Depleted Math	rface (F	-6)		Nesic S	Spodic (TA6) (ML BA 144A 145 149B)
Sandy M	loved Matrix (S4)		Redox Dark St	Surface	0) (F7)		Red Pa	
Sandy B	adox (S5)		Beday Depress	sions (Fi	8)		Verv St	hallow Dark Surface (F22)
Oandy R	Matrix (S6)		Marl (E10) (I R		0)		Other (I	Explain in Remarks)
Dark Sur	face (S7)			IX IX, E)				
³ Indicators of	hydrophytic vegetat	ion and w	etland hydrology mu	ist he ni	resent ur	nless dist	urbed or problematic	
Restrictive I	aver (if observed):		citana nyarology ma					-
Type								
Denth (in	ab a a \ .						Ukudain Chil Danad	
Depth (in	cnes).						Hydric Soll Prese	
Remarks:								
This data form	n is revised from No	rthcentral	and Northeast Reg	ional Su		Version	2.0 to include the NR	RCS Field Indicators of Hydric Soils,
	2015 Enala. (http://w	///////////////////////////////////////				3/11/0514	2p2_051295.000x)	

Project/Site: Hudson Logistics Center	City/County: Hudson Sampling Date: 12/2/20
Applicant/Owner: Hillwood Development	State: NH Sampling Point: D_UPL
Investigator(s): Brendan Quigley, Gove Environmental Services	Section, Township, Range:
Landform (hillside, terrace, etc.): Lower Merrimack River Valley Loo	al relief (concave, convex, none): convex Slope %:
Subregion (LRR or MLRA): LRR R Lat: see map	Long: Datum:
Soil Map Unit Name:	NWI classification: PFO1B
Are climatic / hydrologic conditions on the site typical for this time of year	? Yes No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologysignificantly dis	turbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrologynaturally proble	matic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sa	mpling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X If yes, optional Wetland Site ID: Impact Area D
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	
Remarks: (Explain alternative procedures I	nere or in a se	eparate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is requi	Surface Soil Cracks (B6)	
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots	s (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C	C6) Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7	7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (E	38)	FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes	No X Depth (inches):	
Water Table Present? Yes	No X Depth (inches):	
	Wetten ditteductors Duccess (O	
Saturation Present? Yes	No X Depth (Inches):	wetland Hydrology Present? Yes No X
(includes capillary fringe)	No <u>X</u> Depth (inches):	wetland Hydrology Present ? Yes No X
(includes capillary fringe) Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspectic	ons), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspection	ons), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspection	ons), if available:
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, model) Remarks:	no <u>X</u> Depth (inches):	ons), if available:
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, model) Remarks:	nitoring well, aerial photos, previous inspectic	ons), if available:
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, model) Remarks:	no <u>X</u> Depth (inches):	ons), if available:
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, model) Remarks:	nitoring well, aerial photos, previous inspectio	ons), if available:
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, model) Remarks:	nitoring well, aerial photos, previous inspection	ons), if available:
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, model) Remarks:	nitoring well, aerial photos, previous inspection	ons), if available:
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, model) Remarks:	nitoring well, aerial photos, previous inspection	ons), if available:
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, model) Remarks:	no <u>x</u> Depth (inches):	ons), if available:
Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, model) Remarks:	no <u>x</u> Depth (inches):	wetiand Hydrology Present ? Yes <u>No X</u>

Sampling Point: D_UPL

Tree Stratum (Plot size:	Absolute % Cover	Dominant	Indicator	Dominance Test worksheet
1 Pinus strobus	30	Vos	FACU	Dominance rest worksheet.
2.		103	1400	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
3. Betula lenta	20	Yes	FACU	Total Number of Dominant
4. Betula populifolia	10	No	FAC	Species Across All Strata: 5 (B)
5				Percent of Dominant Species
6				That Are OBL, FACW, or FAC: 20.0% (A/B)
7				Prevalence Index worksheet:
	60	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species x 1 =
1. Euonymus alatus	5	Yes	UPL	FACW species x 2 =
2. Acer rubrum	5	Yes	FAC	FAC species x 3 =
3				FACU species x 4 =
4				UPL species x 5 =
5				Column Totals: (A) (B)
6				Prevalence Index = B/A =
7.				Hydrophytic Vegetation Indicators:
	10	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				2 - Dominance Test is >50%
1. Dennstaedtia punctilobula	20	Yes	UPL	3 - Prevalence Index is ≤3.0 ¹
2 Osmundastrum cinnamomeum		No	FACW	4 - Morphological Adaptations ¹ (Provide supporting
3 Pinus strobus	2	No	FACU	data in Remarks or on a separate sheet)
A	Z	110	TAGO	Droblemetic Hydrophytic Vegetation ¹ (Evaluin)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
<i>1.</i>				Definitions of vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				dameter at breast neight (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
12		·		and greater than of equal to 3.20 it (1 iii) tail.
12.		Tatal Causar		Herb – All herbaceous (non-woody) plants, regardless
		= I otal Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2		. <u> </u>		Hydrophytic
3				Vegetation
4				Present? Yes <u>No X</u>
		=Total Cover		
Remarks: (Include photo numbers here or on a separ	ate sheet.)			

Profile Desc	cription: (Describe t	o the de	pth needed to docu	ument t	ne indica	tor or co	nfirm the absence of indica	tors.)
Depth	Matrix		Redo:	x Featur	es Tran 1	1 2	Tartura	Descenter
		%	Color (moist)	<u>%</u>	Туре	LOC	Sendu	Remarks
0-3	10yr 2/1					·	Sandy	
3-4	10yr 3/3					·	Sandy	
4-12	10yr 4/6					·	Sandy	
						<u> </u>	·	
						:		
						<u> </u>	·	
						<u> </u>		
						<u> </u>	·	
¹ Type: C=C	oncentration, D=Depl	etion, RN	I=Reduced Matrix, N	IS=Mas	ked Sanc	Grains.	² Location: PL=Pore	Lining, M=Matrix.
Histosol Histosol Histic Ep Black Hi Hydroge Stratified Depleted Thick Da Sandy M Sandy R Sandy R Stripped Dark Su	(A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Bleyed Matrix (S4) Redox (S5) I Matrix (S6) rface (S7) f hydrophytic vegetati	(A11) on and w	Polyvalue Belo MLRA 149B Thin Dark Surf High Chroma S Loamy Mucky Loamy Gleyed Depleted Matri Redox Dark Su Depleted Dark Redox Depress Marl (F10) (LR	w Surfa) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F R K, L) ust be pr	ce (S8) (I (LRR R, 511) (LRF (F1) (LRF F2) (F7) (F7) B)	RR R, MLRA 1 K, L) K, L)	2 cm Muck (A10 Coast Prairie Re 5 cm Mucky Pea Polyvalue Below Thin Dark Surfac Iron-Manganese Piedmont Floodg Mesic Spodic (T Red Parent Mate Very Shallow Da Other (Explain in	(All All All All All All All All All All
Type:	Layer (il observed).							
Depth (ii	nches):						Hydric Soil Present?	Yes <u>No X</u>
Remarks: This data for Version 7.0,	m is revised from Noi 2015 Errata. (http://w	thcentra ww.nrcs.	l and Northeast Reg usda.gov/Internet/FS	ional Su SE_DOC	pplement CUMENT	: Version S/nrcs142	2.0 to include the NRCS Field 2p2_051293.docx)	I Indicators of Hydric Soils,

Project/Site: Hudson Logistics Center	City/County: Hudson Sampling Date: 11/25/20
Applicant/Owner: Hillwood Development	State: NH Sampling Point: F1-UPL
Investigator(s): Brendan Quigley, Gove Environmental Services	Section, Township, Range:
Landform (hillside, terrace, etc.): Lower Merrimack River Valley	Local relief (concave, convex, none): near flat Slope %:
Subregion (LRR or MLRA): LRR R Lat: see map	Long: Datum:
Soil Map Unit Name:	NWI classification: PEM2Bf
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantl	y disturbed? Are "Normal Circumstances" present? Yes No _X
Are Vegetation , Soil , or Hydrology naturally p	roblematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, important features, etc.
Hvdrophytic Vegetation Present? Yes No X	Is the Sampled Area
Hydric Soil Present? Yes No X	within a Wetland? Yes No X
Wetland Hydrology Present? Yes X No	If yes, optional Wetland Site ID: Impact Area F
HYDROLOGY	
Watland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: check all that apply	() Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Lu	eaves (B9) Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (E	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B	15) Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide	e Odor (C1) Crayfish Burrows (C8)
Sediment Deposits (B2) X Oxidized Rhizos	oheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Red	uced Iron (C4) Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Red	uction in Tilled Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5)	Ce (C7) Shallow Aquitard (D3)
Inundation visible on Aerial Imagery (B7)Other (Explain In	EAC-Neutral Test (D5)
Eicld Observations:	
FIELO ODServations. Surface Water Present? Yes No X Depth (i	inchas).
Water Table Present? Yes X No Depth (i	inches): 16
Saturation Present? Yes No Depth (i	nches): Wetland Hydrology Present? Yes X No
(includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

(includes capillary fringe)

Sampling Point: F1-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1 2.				Number of Dominant Species That Are OBL, FACW, or FAC: (A)
3.				Total Number of Dominant
4				Species Across All Strata: (B)
5				Percent of Dominant Species
o				Provolonce Index worksheet:
···		-Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:				OBL species x1 =
<u></u> , (,), 1.				FACW species x 2 =
2.				FAC species x 3 =
3.				FACU species x 4 =
4.				UPL species x 5 =
5.				Column Totals: (A) (B)
6.				Prevalence Index = B/A =
7.				Hydrophytic Vegetation Indicators:
	:	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				2 - Dominance Test is >50%
1. Maintained lawn (kentucky bluegrass)				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12	:	=Total Cover		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				
3				Hydrophytic Vegetation
4				Present? Yes <u>No X</u>
	:	=Total Cover		
Remarks: (Include photo numbers here or on a separate see remarks in summary of findings	rate sheet.)			

Profile Desc	ription: (Describe	to the de	oth needed to docu	ument t	he indica	ator or c	confirm the absence of indicators.)
Depth	Matrix		Redo	x Featu	res		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-4	10yr 2/2	100					Sandy oxidized rhizoshperes
4-5	2.5y 5/2	95	2.5y 5/6	5	С	М	Sandy
5-13	2.5y 6/3	95	2.5y 5/6	5	С	М	Sandy
							·
17 0.0						<u> </u>	
Type: C=Cc	ncentration, D=Depl	letion, RIV	=Reduced Matrix, N	/IS=Mas	ked Sand	Grains.	. *Location: PL=Pore Lining, M=Matrix.
Histosol	ndicators:		Polyaciuo Bolo		co (S9) (a cm Muck (A10) (LPR K L MLPA 140P)
Histosof	(AT) inodon (A2)			w Sulla	ice (30) (i		Coact Brairie Boday (A16) (LRR R, L, MLRA 149D)
Black His	tic (A3)		Thin Dark Surf) 200 (SQ		MIDA	149B) 5 cm Mucky Peat or Peat (S3) (I BP K P)
Black The	Sub (A3)		Ligh Chroma	ace (39 Sonde (9) (LKK K 211) /I DI		Delwalue Below Surface (S9) (LRK K, L, K)
				Minaral	(LR (LR)	\mathbf{x} \mathbf{x} \mathbf{x} \mathbf{x} \mathbf{x}	This Dark Surface (S0) (LRR R, L)
	Layers (Ab)	()]]			(F1) (LKI (F0)	Κ Κ, Ľ)	Thin Dark Sunace (S9) (LRR K, L)
Depleted	Below Dark Surface	e (A11)	Loamy Gleyed	iviatrix ((F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	rk Sufface (A12)		Depleted Matri	x (F3)	-0)		
Sandy M	ucky Mineral (S1)		Redox Dark St	Inface (F	-6)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B
Sandy G	leyed Matrix (S4)		Depleted Dark	Surface	e (F7)		
Sandy R	edox (S5)		Redox Depres		8)		Very Shallow Dark Surface (F22)
Stripped	Matrix (S6)		Marl (F10) (LR	R K, L)			Other (Explain in Remarks)
Dark Sur	face (S7)						
³ Indicators of	hydrophytic vegetat	ion and w	etland hydrology mu	ust be p	resent, ur	nless dis	turbed or problematic.
Restrictive L	ayer (if observed):						
Depth (in	ches):						Hvdric Soil Present? Yes No X
Remarks:							
Soil has been	n disturbed by regrac	ding for co	nstruction of the go	If course	e		

Project/Site: Huds	son Logistics C	enter		City/County:	Hudson			Sampling Date:	11/25/20
Applicant/Owner:	Hillwood De	evelopment				State:	NH	Sampling Point:	F1-WET
Investigator(s): Bro	endan Quigley,	Gove Environmenta	I Services	Sec	tion, Towns	ship, Range:			
Landform (hillside,	terrace, etc.):	Lower Merrimack	River Valley Lo	ocal relief (concave	e, convex, i	none): <u>near fla</u>	t	Slope	%:
Subregion (LRR or	MLRA): LRR	R La	at: see map		Long:			Datum:	
Soil Map Unit Name	e:					NWI classifi	cation:	PEM2Bf	
Are climatic / hydro	logic conditions	s on the site typical f	or this time of yea	ar? Ye	es <u>X</u>	No	(If no, e	explain in Remarks	.)
Are Vegetation	X_, Soil	, or Hydrology	significantly d	listurbed? A	re "Normal	Circumstance	s" prese	ent? Yes X	No
Are Vegetation	, Soil	, or Hydrology	naturally prob	olematic? (I	f needed, e	explain any ans	wers in	Remarks.)	
SUMMARY OF	FINDINGS	– Attach site ma	ap showing s	sampling poin	t locatio	ns, transec	ts, im	portant featur	es, etc.
Hydrophytic Veget	tation Present?	Yes >	(No	Is the San	npled Area				
Hydric Soil Preser	nt?	Yes >	(No	within a V	Vetland?	Yes	Х	No X	
Wetland Hydrolog	y Present?	Yes >	(No	lf yes, opti	onal Wetla	nd Site ID: Ir	npact A	rea F	
Remarks: (Explain Trasect is located normal circumstar	n alternative pro at the edge of t nses	ocedures here or in a the maintained golf o	a separate report course. Gtroundo	:.) cover cosists of tur	f but tyrees	and sshuibs a	ayt the e	edge of the plot rep	present

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is require	Surface Soil Cracks (B6)	
Surface Water (A1)	Drainage Patterns (B10)	
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Ro	bots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils	s (C6) Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B	8)	X FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes	No X Depth (inches):	
Water Table Present? Yes X	No Depth (inches): 16	
Saturation Present? Yes	No Depth (inches):	Wetland Hydrology Present? Yes X No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, previous inspec	ections), if available:
Remarks:		

Sampling Point: F1-WET

•				
Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Acer rubrum	15	Yes	FAC	Number of Demission Operation
2. Frangula alnus	20	Yes	FAC	That Are OBL, FACW, or FAC: 2 (A)
3. Cornus amomum	5	No	FACW	Tatal Number of Deminent
4. Lyonia ligustrina	5	No	FACW	Species Across All Strata: 2 (B)
5. Spiraea latifolia	2	No	FACW	Demonst of Deminent Creation
6.				That Are OBL, FACW, or FAC: 100.0% (A/B)
7.				Prevalence Index worksheet:
	47	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species 0 x 1 = 0
1.				FACW species 12 x 2 = 24
2.				FAC species 35 x 3 = 105
3.				FACU species $0 x 4 = 0$
4.				UPL species $0 \times 5 = 0$
5.				Column Totals: 47 (A) 129 (B)
6.				Prevalence Index = $B/A = 2.74$
7.				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				X 2 - Dominance Test is >50%
1. Maintained lawn (kentucky bluegrass)				X 3 - Prevalence Index is ≤3.0 ¹
2.				4 - Morphological Adaptations ¹ (Provide supporting
3.				data in Remarks or on a separate sheet)
4.				Problematic Hydrophytic Vegetation ¹ (Explain)
5.				
6.				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in, DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All berbaceous (non-woody) plants, regardless
		=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3 28 ft in
1				height.
2				
3				Hydrophytic Vegetation
4				Present? Yes X No X
		=Total Cover		
Remarks: (Include photo numbers here or on a sepa	rate sheet.)			1
plot is located at the edge of the maintained golf cour	se. Shrub a	nd tree layers	represent nor	mal circumstances while herbacouse layer is maintained
lawn				

Profile Desc	ription: (Describe	to the de	oth needed to doc	ument t	he indica	ator or co	confirm the absence of indicators.)
Depth	Matrix		Redo	x Featur	res		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-3	10yr 2/1	100					Sandy oxidized rhizoshperes
3-13	5v 6/2	95	2.5v 5/6	5	С	М	Sandy
			2.09 0,0				
		·					
		·					
		·					
		·					
		·					
		. <u> </u>					
	ncontration D-Don	lotion PM	-Poducod Matrix	MS-Mac	kod San	Graine	² Location: PL-Pore Liping M-Matrix
	ndicators:			vio=ivias	keu Sant	Grains.	Indicators for Problematic Hydric Soils ³
Histosol	(A1)		Polyvalue Belg	w Surfa	ce (S8) (2 cm Muck (A10) (I RR K I MIRA 149B)
Histic Ep	ipedon (A2)		MLRA 1498			Litit it,	Coast Prairie Redox (A16) (LRR K. L. B)
Black His	stic (A3)		Thin Dark Sur	, face (S9) (LRR R	. MLRA 1	149B) 5 cm Mucky Peat or Peat (S3) (LRR K. L. R)
Hvdroger	n Sulfide (A4)		High Chroma	Sands (S	511) (LRI	,	Polvvalue Below Surface (S8) (LRR K. L)
Stratified	Lavers (A5)		Loamy Mucky	Mineral	(F1) (LR	R K, L)	Thin Dark Surface (S9) (LRR K, L)
X Depleted	Below Dark Surface	e (A11)	Loamy Gleved	l Matrix ((F2)	. ,	Iron-Manganese Masses (F12) (LRR K, L, R)
Thick Da	rk Surface (A12)	· · ·	Depleted Matr	ix (F3)	. ,		Piedmont Floodplain Soils (F19) (MLRA 149B
Sandy M	ucky Mineral (S1)		Redox Dark S	urface (F	-6)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy G	leyed Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Parent Material (F21)
X Sandy R	edox (S5)		Redox Depres	sions (F	8)		Very Shallow Dark Surface (F22)
Stripped	Matrix (S6)		Marl (F10) (LF	R K, L)			Other (Explain in Remarks)
Dark Sur	face (S7)						
³ Indicators of	hydrophytic vegetar	tion and w	etland hydrology m	ust be p	resent, u	nless dist	turbed or problematic.
Restrictive L	ayer (if observed):						
Туре:							
Depth (in	ches):						Hydric Soil Present? Yes X No X
Remarks:							
Soil has been	n disturbed by regrae	ding for co	nstruction of the go	lf course	e		

				0
Project/Site: Hudson Logistics Center		City/County: Hudsor	1	Sampling Date: 11/25/20
Applicant/Owner: Hillwood Development			State: NH	Sampling Point: G-UPL
Investigator(s): Brendan Quigley, Gove Enviror	nmental Services	Section, To	wnship, Range:	
Landform (hillside, terrace, etc.): Lower Merri	mack River Valley Local	relief (concave, conve	x, none): near flat	Slope %:
Subregion (LRR or MLRA): LRR R	Lat: see map	Long:		Datum:
Soil Map Unit Name:			NWI classification	: PEM2Bf
Are climatic / hydrologic conditions on the site to	voical for this time of year?	Yes X	No (If no	explain in Remarks)
Are Vegetation X Soil or Hydrolo	av significantly disturb	and? Are "Norm	al Circumstances" pres	sent? Yes No X
Are Vegetation, Soil, or Hydrolo		tio? (If peeded		
	gynaturally problema		i, explain any answers i	n Remarks.)
SUMMARY OF FINDINGS – Attach s	ite map showing sam	pling point locat	ions, transects, in	nportant features, etc.
Hydrophytic Vegetation Present?	res No X	Is the Sampled A	.ea	
Hydric Soil Present?	Yes No X	within a Wetland	Yes	No X
Wetland Hydrology Present?		If yes optional We	tland Site ID: Impact	Area G
	<u> </u>		<u></u>	
Remarks: (Explain alternative procedures here	e or in a separate report.)			
Trasect is located in an area of maintained gold	f course turf and consists of	cultivated sod forming	grass, likley kentucky l	bluegrass. The area is not
likley to support hydrophytic vegeation under n	ormal circumstanses based	on appaeance of culti	vated lawn and lack of s	signs of hydrology
			O dam . la dia stam d	
Wetland Hydrology Indicators:	t aback all that apply)		Secondary Indicators ((minimum of two required)
Surface Water (A1)	Water-Stained Leaves (F	30)	Drainage Patterns	(B10)
High Water Table (A2)	Aquatic Fauna (B13)	55)	Moss Trim Lines (B16)
Saturation (A3)	Marl Deposits (B15)		Dry-Season Wate	r Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows	(C8)
Sediment Deposits (B2)	X Oxidized Rhizospheres of	on Living Roots (C3)	Saturation Visible	on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced Irc	on (C4)	Stunted or Stresse	ed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in	Tilled Soils (C6)	Geomorphic Posit	ion (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquitard ((D3)
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remark	(S)	Microtopographic	Relief (D4)
Sparsely Vegetated Concave Surface (B8)		,	FAC-Neutral Test	(D5)
Field Observations:				· · ·
Surface Water Present? Yes	No X Depth (inches):			

(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

NoXDepth (inches):NoDepth (inches):

Remarks:

Water Table Present?

Saturation Present?

Yes

Yes

Yes X No

Wetland Hydrology Present?

Sampling Point: G-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. 2.				Number of Dominant Species That Are OBL, FACW, or FAC:(A)
3				Total Number of Dominant
4				Species Across All Strata: (B)
5				Percent of Dominant Species
7.				Prevalence Index worksheet:
		=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species x 1 =
1.				FACW species x 2 =
2.				FAC species x 3 =
3.				FACU species x 4 =
4.				UPL species x 5 =
5.				Column Totals: (A) (B)
6.				Prevalence Index = B/A =
7.				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				2 - Dominance Test is >50%
1. Maintained lawn (kentucky bluegrass)				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	:	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				Hydrophytic
3				Vegetation
4				Present? Yes <u>No X</u>
		=Total Cover		
Remarks: (Include photo numbers here or on a sepa see remarks in summary of findings	arate sheet.)			

Profile Desc	ription: (Describe	to the de	pth needed to doc	ument t	he indica	ator or co	onfirm the absence of indicators.)
Depth	Matrix		Redo	x Featu	res		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-5	10yr 2/2	100					Sandy oxidized rhizoshperes
5-13	2.5y 5/3	95	10yr 5/6	5	С	М	Sandy
					·		
		·			· <u> </u>		
					· <u> </u>		· · · · · · · · · · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ · · _ ·
¹ Type: C=Co	oncentration, D=Dep	letion. RM		/S=Mas	ked Sand	Grains	² Location: PI =Pore Lining, M=Matrix
Hydric Soil I	ndicators:						Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)		Polyvalue Belo	w Surfa	ice (S8) (I	LRR R.	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Ep	vipedon (A2)		 MLRA 149B	5)	(/(,	Coast Prairie Redox (A16) (LRR K, L, R)
Black His	stic (A3)		Thin Dark Surf	, ace (S9) (LRR R	, MLRA 1	149B) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
Hydroger	n Sulfide (A4)		High Chroma S	Sands (S	511) (LRF	R K, L)	Polyvalue Below Surface (S8) (LRR K, L)
Stratified	Layers (A5)		Loamy Mucky	Mineral	(F1) (LR	R K, L)	Thin Dark Surface (S9) (LRR K, L)
Depleted	Below Dark Surface	e (A11)	Loamy Gleyed	Matrix	(F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
Thick Da	rk Surface (A12)		Depleted Matri	x (F3)			Piedmont Floodplain Soils (F19) (MLRA 1498
Sandy M	lucky Mineral (S1)		Redox Dark Su	urface (F	-6)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B
Sandy G	leyed Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Parent Material (F21)
Sandy R	edox (S5)		Redox Depres	sions (F	8)		Very Shallow Dark Surface (F22)
Stripped	Matrix (S6)		Marl (F10) (LR	R K, L)			Other (Explain in Remarks)
Dark Sur	face (S7)						
2							
³ Indicators of	hydrophytic vegetat	tion and w	etland hydrology mu	ust be p	resent, ur	nless dist	turbed or problematic.
Restrictive L	_ayer (if observed):						
Type:							
Depth (in	nches):						Hydric Soil Present? Yes No X
Remarks:							
Soil has been	n disturbed by regrac	ding for co	instruction of the go	If course	e		

Project/Site: Hudson Logistics Center		City/County: Hudson	·	Sampling Date: 11/25/20
Applicant/Owner: Hillwood Development			State: NH	Sampling Point: G-WET
Investigator(s): Brendan Quigley, Gove Envir	ronmental Services	Section, Tov	wnship, Range:	
Landform (hillside, terrace, etc.): Lower Me	errimack River Valley Local r	elief (concave, conve	x. none): shallow swale	Slope %:
Subregion (I RR or MI RA): I RR R	Lat: see map	Long.	······································	Datum:
Soil Man Unit Name	Eut. 000 map		NWI classification:	PFM2Bf
Are climatic / bydrologic conditions on the site	typical for this time of year?	Yes X	No (lf no. f	avolain in Remarks.)
Are Vegetation X Soil or Hydro	significantly disturb	Are "Norm	(ii iii, c	ont? Vee No X
Are Vegetation <u>A</u> , soil <u>, or Hydro</u>				
			, explain any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach	site map showing samp	pling point locati	ions, transects, im	portant features, etc.
Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Ar	ea	
Hydric Soil Present?	Yes X No	within a Wetland?	Yes X	No
Wetland Hydrology Present?	Yes X No	If yes, optional Wet	tland Site ID: Impact A	Area G
likley to support hydrophytic vegeation under adjacnt non-maintained areas	normal circumstanses based o	on observatuion of soc	stressed by peristent p	onding and vegetation in
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators (r	ninimum of two required)
Primary Indicators (minimum of one is require	ed; check all that apply)		Surface Soil Cracks	s (B6)
Surface Water (A1)	Water-Stained Leaves (B	39)	Drainage Patterns	(B10)
X High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lines (B	316)
Saturation (A3)	Marl Deposits (B15)	~~	Dry-Season Water	Table (C2)
Water Marks (B1)		U1)	CrayIISh Burrows (C	J8)
Drift Deposits (B3)	Presence of Reduced Iro	In Living Roots $(C3)$	X Stunted or Stresse	n Aenai intagery (03) d Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in	Tilled Soils (C6)	Geomorphic Positic	on (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquitard ([D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remark	(S)	Microtopographic R	Relief (D4)
Sparsely Vegetated Concave Surface (B	38)		FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present? Yes	No Depth (inches):			
Water Table Present? Yes X	No Depth (inches):	12		
Saturation Present? Yes	No Depth (inches):	Wetland	d Hydrology Present?	Yes X No
(includes capillary fringe)		<u> </u>		
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, prev	vious inspections), it a	wailable:	
Remarks:				

Sampling Point: G-WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1 2				Number of Dominant Species That Are OBL, FACW, or FAC:(A)
3				Total Number of Dominant Species Across All Strata: (B)
5.				Percent of Dominant Species
6				That Are OBL, FACW, or FAC:(A/B)
7				Prevalence Index worksheet:
		=Total Cover		Total % Cover of:Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species x1 = FACIAL species x2
1				FACW species <u>x</u> 2 =
2.	·			FAC species X 3 =
3		. <u> </u>		FACU species x 4 =
4.				UPL species x 5 =
5				Column Totals: (A)(B)
6				Prevalence Index = B/A =
7				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				2 - Dominance Test is >50%
1. Maintained lawn (kentucky bluegrass)				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks of on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	:	=Total Cover		of size, and woody plants less than 3.28 ft tall.
<u>woody vine Stratum</u> (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
·				neight.
2				Hydrophytic
3				Vegetation
4				Present? Yes <u>X</u> No
	:	= I otal Cover		
Remarks: (Include photo numbers here or on a sepa see remarks in summatry of findings	arate sheet.)			
, <u>-</u> -				

Profile Desc	ription: (Describe	to the dep	oth needed to doc	ument t	he indica	ator or c	confirm the absence of indicators.)			
Depth	Matrix		Redo	x Featur	es					
(inches)	Color (moist)	%	Color (moist)	%	Type'	Loc ²	Texture Remarks			
0-5	10yr 2/2	95	7.5yr 3/4	5	С	Μ	Sandy oxidized rhizopspheres			
5-12	2.5y 5/2	60	2.5y 5/6	10	С	М	Sandy includes arrea of mixed 2.5y4/2			
12-18	10yr 2/1	100					Muck buried organic			
		·								
¹ Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix, N	NS=Mas	ked Sand	d Grains.	. ² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil	Indicators:						Indicators for Problematic Hydric Soils ³ :			
Histosol	(A1)		Polyvalue Belo	ow Surfa	ce (S8) (LRR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)			
Histic Ep	oipedon (A2)		MLRA 1498	8)			Coast Prairie Redox (A16) (LRR K, L, R)			
Black Hi	stic (A3)		Thin Dark Sur	face (S9) (LRR R	, MLRA	149B) 5 cm Mucky Peat or Peat (S3) (LRR K, L,			
Hydroge	n Sulfide (A4)		High Chroma	Sands (S	611) (LR I	R K, L)	Polyvalue Below Surface (S8) (LRR K, L)			
Stratified	l Layers (A5)		Loamy Mucky	Mineral	(F1) (LR	R K, L)	Thin Dark Surface (S9) (LRR K, L)			
X Depleted	Below Dark Surface	e (A11)	Loamy Gleved	l Matrix (F2)		Iron-Manganese Masses (F12) (LRR K. L. R)			
Thick Da	ark Surface (A12)	- ()	Depleted Matr	ix (F3)	,		Piedmont Floodplain Soils (F19) (MI RA 149B)			
Sandy M	lucky Mineral (S1)		Bedox Dark Si	urface (F	-6)		Mesic Spodic (TA6) (MLRA 1445 1498)			
Sandy N	loved Metrix (S4)		Depleted Dark		(E7)		Mesic Spoalc (TA6) (MLRA 144A, 145, 149B)			
Sandy G					; (F <i>1)</i>					
	edox (55)		Redox Depres		8)		Very Shallow Dark Surface (F22)			
Stripped	Matrix (S6)		Marl (F10) (LF	R K, L)			Other (Explain in Remarks)			
Dark Su	rface (S7)									
³ Indicators of Restrictive I	f hydrophytic vegeta Laver (if observed):	tion and w	etland hydrology m	ust be pi	resent, u	nless dis	sturbed or problematic.			
Type:	,									
Depth (ir	nches):						Hydric Soil Present? Yes X No			
Remarks:	- Peterski al berena		(16						
Soll has beel	n disturbed by regrae	aing for co	nstruction of the go	of course	9					
WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics C	Center		Sampling Date: 11/25/20		
Applicant/Owner: Hillwood D	Development			State: NH	Sampling Point: H-UPL
Investigator(s): Brendan Quigley	r, Gove Environmer	ntal Services	Section, Towns	hip, Range:	
Landform (hillside, terrace, etc.):	Lower Merrimacl	k River Valley Local r	elief (concave, convex, n	ione): near flat	Slope %:
Subregion (LRR or MLRA): LRF	R R	Lat: see map	Long:		Datum:
Soil Map Unit Name:				NWI classification:	PEM2Bf
Are climatic / hydrologic condition	ns on the site typica	I for this time of year?	Yes X	No (If no,	explain in Remarks.)
Are Vegetation X, Soil	, or Hydrology	significantly disturb	ed? Are "Normal of	Circumstances" pres	ent? Yes <u>No X</u>
Are Vegetation, Soil	, or Hydrology	naturally problemat	ic? (If needed, ex	xplain any answers ir	n Remarks.)
SUMMARY OF FINDINGS	– Attach site r	map showing samp	oling point location	ns, transects, im	portant features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present?	? Yes_ Yes_	No <u>X</u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes	No <u>X</u>
Wetland Hydrology Present?	Yes	No <u>X</u>	If yes, optional Wetlan	d Site ID: Impact	Area H
Remarks: (Explain alternative pr Trasect is located in an area of r likley to support hydrophytic veg	rocedures here or in maintained golf cou eation under norma	n a separate report.) rse turf and consists of c al circumstanses based c	ultivated sod forming gra	ass, likley kentucky b ad lawn and lack of s	oluegrass. The area is not igns of hydrology
HYDROLOGY					

Wetland Hydrology Indicate	ors:				Secondary Indicators (min	nimum of two	required)
Primary Indicators (minimum	of one is require	Surface Soil Cracks (B6)					
Surface Water (A1)	Drainage Patterns (B10)						
High Water Table (A2)	Moss Trim Lines (B16	5)					
Saturation (A3)		Marl D	eposits (B15)		Dry-Season Water Ta	ble (C2)	
Water Marks (B1)		Hydrog	gen Sulfide Odor (C1)		Crayfish Burrows (C8))	
Sediment Deposits (B2)		X Oxidize	ed Rhizospheres on Living R	oots (C3)	Saturation Visible on A	Aerial Image	ry (C9)
Drift Deposits (B3)		Preser	nce of Reduced Iron (C4)		Stunted or Stressed F	Plants (D1)	
Algal Mat or Crust (B4)		Recent	t Iron Reduction in Tilled Soi	ls (C6)	Geomorphic Position	(D2)	
Iron Deposits (B5)		Thin M	luck Surface (C7)		Shallow Aquitard (D3)		
Inundation Visible on Ae	rial Imagery (B7) Other ((Explain in Remarks)		Microtopographic Reli	ef (D4)	
Sparsely Vegetated Con	cave Surface (B	8)			FAC-Neutral Test (D5)	
Field Observations:							
Surface Water Present?	Yes	No	Depth (inches):				
Water Table Present?	Yes	No X	Depth (inches):				
Saturation Present?	Yes	No	Depth (inches):	Wetlan	nd Hydrology Present?	Yes	No X
(includes capillary fringe)							
Describe Recorded Data (str	eam gauge, moi	nitoring well,	aerial photos, previous insp	ections), if a	available:		
Remarks:							

VEGETATION - Use scientific names of plants.

Sampling Point: H-UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. 2.				Number of Dominant Species That Are OBL, FACW, or FAC:(A)
3 4				Total Number of Dominant Species Across All Strata:(B)
5 6				Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
7				Prevalence Index worksheet:
		=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species x 1 =
1				FACW species x 2 =
2				FAC species x 3 =
3.				FACU species x 4 =
4.				UPL species x 5 =
5.				Column Totals: (A) (B)
6.				Prevalence Index = B/A =
7.				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				2 - Dominance Test is >50%
1. Maintained lawn (kentucky bluegrass)				$3 - Prevalence Index is \leq 30^{1}$
2				4 - Morphological Adaptations ¹ (Provide supporting
3	······································			data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must
7				Definitions of Vegetation Strata:
8				Deminions of Vegetation offata.
9.				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
10.				
11.				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb - All herbaceous (non-woody) plants, regardless
	;	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
1				height.
2				Hedro de Ale
3				Vegetation
4				Present? Yes No X
		=Total Cover		
Remarks: (Include photo numbers here or on a sepa see remarks in summary of findings	arate sheet.)			

Profile Desc	ription: (Describe	to the dep	oth needed to doc	ument t	he indica	ator or co	confirm the absence of indicators.)		
Depth	Matrix		Redo	x Featu	res				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks		
0-3	10yr 3/3						Sandy		
3-13	2.5v 5/3	95	10vr 5/6	5	С	М	Sandy		
¹ Type: C=Co	ncentration, D=Depl	etion, RM	=Reduced Matrix, N	/IS=Mas	ked Sand	d Grains.	. ² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil I	ndicators:		Debaselus Deb	0 (Indicators for Problematic Hydric Soils":		
Histosol	(A1) inodon (A2)			w Suna	ice (58) (I	LRR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)		
Black His	stic (A3)		Thin Dark Surf) ace (S9		MIRA	149B) 5 cm Mucky Peat or Peat (S3) (I RR K I R)		
Hydroger	n Sulfide (A4)		High Chroma S	Sands (S	511) (LRF	R K. L)	Polyvalue Below Surface (S8) (LRR K, L)		
Stratified	Layers (A5)		Loamy Mucky	Mineral	(F1) (LR	R K, L)	Thin Dark Surface (S9) (LRR K, L)		
Depleted	Below Dark Surface	e (A11)	Loamy Gleyed	Matrix ((F2)	. ,	Iron-Manganese Masses (F12) (LRR K, L, R)		
Thick Da	rk Surface (A12)		Depleted Matri	x (F3)			Piedmont Floodplain Soils (F19) (MLRA 1498		
Sandy M	ucky Mineral (S1)		Redox Dark Su	urface (F	-6)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
Sandy G	leyed Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Parent Material (F21)		
Sandy Re	edox (S5)		Redox Depres	sions (F	8)		Very Shallow Dark Surface (F22)		
Stripped	Matrix (S6)		Marl (F10) (LR	R K, L)			Other (Explain in Remarks)		
Dark Sur	face (S7)								
³ Indicators of	hydrophytic vegetat	ion and w	etland bydrology m	uet ha n	recent ur	aloss dist	turbed or problematic		
Restrictive L	aver (if observed):		eliand hydrology m	usi be p	resent, u	11033 0131			
Type:									
Depth (in	ches):						Hydric Soil Present? Yes No X		
Demorke:									
Soil has beer	disturbed by regrac	lina for co	nstruction of the ao	If course	9				
		3							

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hudson Logistics Center	City/County: Hudson Sampling Date: 11/25/20
Applicant/Owner: Hillwood Development	State: NH Sampling Point: H-WET
Investigator(s): Brendan Quigley, Gove Environmental Ser	vices Section, Township, Range:
Landform (hillside, terrace, etc.): Lower Merrimack River	Valley Local relief (concave, convex, none): near flat Slope %:
Subregion (LRR or MLRA): LRR R Lat: se	e map Long: Datum:
Soil Map Unit Name:	NWI classification: PEM2Bf
Are climatic / hydrologic conditions on the site typical for this	s time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil, or Hydrology si	nificantly disturbed? Are "Normal Circumstances" present? Yes No X
Are Vegetation . Soil . or Hydrology na	turally problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map s	howing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X	No. Is the Sampled Area
Hydric Soil Present? Yes X	No within a Wetland? Yes X No
Wetland Hydrology Present? Yes X	No If yes, optional Wetland Site ID: Impact Area H
likley to support hydrophytic vegeation under normal circur adjacnt non-maintained areas	nstanses based on observatuion of sod stressed by peristent ponding and vegetation in
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all t	nat apply) Surface Soil Cracks (B6)
Surface Water (A1) Water-S	tained Leaves (B9) Drainage Patterns (B10)
X High Water Table (A2) Aquatic	Fauna (B13) Moss Trim Lines (B16)
Saturation (A3) Marl De	Doosits (B15) Dry-Season Water Table (C2)
Water Marks (B1) Hydroge	n Sulfide Odor (C1) Crayfish Burrows (C8)
Sediment Deposits (B2) X Oxidized	Rhizospheres on Living Roots (C3) X Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	e of Reduced Iron (C4) <u>X</u> Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	ron Reduction in Tilled Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5)	ck Surface (C7) Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)Other (E	xplain in Remarks) Microtopographic Relief (D4)
Field Observations:	Denth (inches)
Water Table Present? Ves X No	Depth (inches):
Saturation Present? Yes No	Depth (inches): 10 Wetland Hydrology Present? Ves X No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, a	erial photos, previous inspections), if available:
Remarks:	

VEGETATION - Use scientific names of plants.

Sampling Point: H-WET

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. 2.				Number of Dominant Species That Are OBL, FACW, or FAC:(A)
3				Total Number of Dominant Species Across All Strata: (B)
5 6.				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
7.				Prevalence Index worksheet:
	=	Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species x 1 =
1.				FACW species x 2 =
2.				FAC species x 3 =
3.				FACU species x 4 =
4.				UPL species x 5 =
5	·······			Column Totals: (A) (B)
6				Prevalence Index - B/A -
7				Hydrophytic Vogetation Indicators:
<i>I</i>	·			Denid Test for Undershutin Verstation
Light Charter (Dist size)	=			Persingence Test in Ford
Herb Stratum (Plot size:)				2 - Dominance Test is >50%
1. Maintained lawn (kentucky bluegrass)				$3 - Prevalence index is \leq 3.0$
2				4 - Morphological Adaptations" (Provide supporting
3				
4				Problematic Hydrophytic Vegetation' (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in. (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All berbaceous (non-woody) plants, regardless
	=	Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
·				neight.
2				Hydrophytic
3				Vegetation
4.				Present? Yes <u>×</u> No
	=	Total Cover		
Remarks: (Include photo numbers here or on a sepa see remarks in summatry of findings	rate sheet.)			

Profile Desc	cription: (Describe	to the de	oth needed to doc	ument t	he indica	ator or c	confirm the absence of indicators.)		
Depth	Matrix		Redo	x Featur	es				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks		
0-3	10yr 3/2						Sandy oxidized rhizopspheres		
3-5	2.5y 5/2	90	2.5y 5/6	10	С	М	Sandy		
5-12	2.5y 4/2	95	10yr 4/6	5	С	М	Sandy		
12-16	2.5y 6/2	90	2.5y 5/6	10	С	М	Sandy		
		·					·		
		· <u> </u>							
		·							
¹ Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix, N	MS=Mas	ked Sand	d Grains.	. ² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil	Indicators:		·				Indicators for Problematic Hydric Soils ³ :		
Histosol	(A1)		Polyvalue Belo	ow Surfa	ce (S8) (LRR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)		
Histic Ep	pipedon (A2)		MLRA 149B	B)			Coast Prairie Redox (A16) (LRR K, L, R)		
Black Hi	stic (A3)		Thin Dark Surf	face (S9) (LRR R	, MLRA [·]	149B) 5 cm Mucky Peat or Peat (S3) (LRR K, L,		
Hydroge	n Sulfide (A4)		High Chroma	Sands (S	611) (LR I	R K, L)	Polyvalue Below Surface (S8) (LRR K, L)		
Stratified	d Layers (A5)		Loamy Mucky	Mineral	(F1) (LR	R K, L)	Thin Dark Surface (S9) (LRR K, L)		
X Depleted	d Below Dark Surface	e (A11)	Loamy Gleyed	I Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L,		
Thick Da	ark Surface (A12)		Depleted Matri	ix (F3)			Piedmont Floodplain Soils (F19) (MLRA 14		
Sandy M	lucky Mineral (S1)		Redox Dark S	urface (F	-6)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
Sandy G	Gleyed Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Parent Material (F21)		
X Sandy R	Redox (S5)		Redox Depres	sions (F	8)		Very Shallow Dark Surface (F22)		
Stripped Matrix (S6) Marl (F10) (LRR K, L)						Other (Explain in Remarks)			
Dark Su	rface (S7)								
³ Indicators of	f hydrophytic vegeta	tion and w	etland hydrology m	ust be pi	resent, u	nless dist	sturbed or problematic.		
Restrictive I	Layer (if observed):		, , ,		,				
Type:									
Depth (ir	nches):						Hydric Soil Present? Yes X No		
Remarks:									
Soil has bee	n disturbed by regrae	ding for co	nstruction of the go	olf course	e				





RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)						
ADJACENT LAND USE: golf course						
CONTIGUOUS UNDEVELOPED BUFFER ZO	NE PRESENT? 🗌 Yes 🔀 No					
DISTANCE TO NEAREST ROADWAY OR OT	HER DEVELOPMENT (in feet): 50					
SECTION 2 - DELINEATION (USACE HIG	GHWAY METHODOLOGY; Env-Wt 311.10)					
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249						
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? Xes No					
CONFIRM THAT THE EVALUATION IS BASE	ED ON:					
Office and						
Field examination.						
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):						
🔀 USACE Highway Methodology.						
Other scientifically supported method	l (enter name/ title):					

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	🛛 Yes 🔲 No		🔀 Yes 🔲 No	Major River
2	🛛 Yes 🗌 No	1,3,5,11	☐ Yes ⊠ No	
3	🛛 Yes 🗌 No	3,4,5	🔀 Yes 🔲 No	
4	Yes	8	☐ Yes ⊠ No	This function is supported by wetlands associated with waterways, not necessarily the major river itself but storage is present due to high banks
5	🛛 Yes 🗌 No	4,7,17	🛛 Yes 🗌 No	Major River
6	🛛 Yes 🔲 No	1	☐ Yes ⊠ No	known ES associations, Nashua Prime Wetland
7	🛛 Yes 🔲 No	8,9	☐ Yes ⊠ No	applies to forested bank of river
8	🛛 Yes 🔲 No	1,2,3,4,5,6,10,11	🔀 Yes 🔲 No	major river, production and export is high
9	🛛 Yes 🗌 No	2,8,12	🔀 Yes 🗌 No	major river with many accessable viewing locations, important part of the landscape
10	🛛 Yes 🗌 No	1,2,10,16	☐ Yes ⊠ No	applies to vegetated bank of river only
11	Yes	1,3,6,8,12,14	🔀 Yes 🔲 No	Forested bank of the river is extremely important in maintaining channel stability
12	Yes	1,2,11,19,20,26,30	🛛 Yes 🗌 No	Major NH river with extensive historical, societal, and natural heritage associations
13	Yes	2,4,5,7,9,12	Yes	numerous boating, fishing, and viewing opportunities

14	

🛛 Yes

No

6,7,8,21

🛛 Yes 🗌 No habitat at this location is Riverine, river corridor provides connection to numerous other habitats

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed., 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					

8	-							
SECTION 6 - S	TREAM RESO	URCES SUMN	IARY		·			
DESCRIPTION C	DF STREAM: Me	errimack River		STR	EAM TYPE (ROSGEN)	F		
HAVE FISHERIE	HAVE FISHERIES BEEN DOCUMENTED?					DOES THE STREAM SYSTEM APPEAR STABLE?		
OTHER KEY ON	-SITE FUNCTIO	NS OF NOTE: se	ee Functions an	d Val	ues iin section 4			
The following ta the evaluator u number are de	able can be used used to determining fined in Sectior	d to compile dat ine principal fu 1 4.	a on stream resonction and valu	ource e of e	es. "Important Notes" each stream. The fun	' are to include characteristics ctions and values reference		
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE			PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES		
1	Yes				Yes No			
2	Yes				Yes No			
3	Yes				Yes No			
4	Yes				Yes No			
5	Yes				Yes No			
6	Yes				Yes No			
7	Yes				Yes No			
8	Yes				Yes No			
9	Yes				Yes No			
10	Yes				Yes No			
11	Yes				Yes No			
12	Yes				Yes No			

Irm@des.nh.gov or (603) 271-2147 NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095 www.des.nh.gov

13	Yes		Yes No			
14	Yes		Yes No			
SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)						
🔀 Wildlife and	vegetation div	versity/abundance list.				
🔀 Photograph	Photograph of wetland attached.					
Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.						
For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)						





RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)				
ADJACENT LAND USE: golf course, comerc	ial development			
CONTIGUOUS UNDEVELOPED BUFFER ZO	NE PRESENT? 🗌 Yes 🛛 No			
DISTANCE TO NEAREST ROADWAY OR OT	DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 50			
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)				
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249				
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? Xes No			
CONFIRM THAT THE EVALUATION IS BASED ON:				
Office and				
Field examination.				
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):				
🔀 USACE Highway Methodology.				
Other scientifically supported method	(enter name/ title):			

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE	HIGHWAY METHODOLOGY; Env-Wt 311.10)					
WETLAND ID: EA2	LOCATION: (LAT/ LONG) 42.724385/71.426943					
WETLAND AREA: ~16 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Forested					
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND?	COWARDIN CLASS: PFO1B					
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM?	IS THE WETLAND PART OF:					
if not, where does the wetland lie in the drainage basin? low	IS THE WETLAND HUMAN-MADE?					
IS THE WETLAND IN A 100-YEAR FLOODPLAIN?	ARE VERNAL POOLS PRESENT? Yes No (If yes, complete the Vernal Pool Table)					
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? 🔀 Yes 🔲 No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? Yes No					
PROPOSED WETLAND IMPACT TYPE: Impact Area 1 Fill/Stream Crossing	PROPOSED WETLAND IMPACT AREA: 9,125 SF/249 LF					
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (US	SACE HIGHWAY METHODOLOGY; Env-Wt 311.10)					
The following table can be used to compile data on wetlands in the "Functions/ Values" column refer to the following fun	The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values:					
 Ecological Integrity (Ironi NSA 482-A.2, XI) Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) Flood Storage (from USACE Highway Methodology: Floodflow Alteration) Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) 						
 Production Export (Nutrient) (from USACE Highway N Scenic Quality (from USACE Highway Methodology: V Codiment Transition (from USACE Highway Methodology) 	 Production Export (Nutrient) (from USACE Highway Methodology) Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 					
 Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) Uniqueness/Heritage (from USACE Highway Methodology) 						
 Wetland-based Recreation (from USACE Highway Methodology: Recreation) Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) 						
First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i> . Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i> .						

"functions and values can be principal if they are an important physical component of a wetland ecosystem (function

only) and/or are considered of special value to society, from a local, regional, and/or national perspective".

NHDES-W-06-049

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ⊠ No		Yes No	extensive alteration, impacted by drainage, surounded by development
2	☐ Yes ⊠ No		☐ Yes ⊠ No	disturbed wetland, no access
3	☐ Yes ⊠ No		Ves No	perennial status of sytream is questionable
4	🛛 Yes 🔲 No	4,5,6,7,8,9,11,13,15,18	🔀 Yes 🔲 No	constricted outlet and basin topo provide storage
5	Yes		Yes No	
6	☐ Yes ⊠ No		Yes No	no known ES, disturbed
7	Yes	3,4, 5, 6, 7, 8, 12,13	🔀 Yes 🔀 No	organic soils, retention, dense vegetation, comlpex flow path. -diminished by ditching and disturbance
8	🛛 Yes 🗌 No	1,2,8,12	☐ Yes ⊠ No	forested wetland with mast prodiucing trees and berry prodicing shrubs
9	☐ Yes ⊠ No		Yes No	disturbed wetland with limited viewing oportunity
10	🛛 Yes 🔲 No	1,2,4,5,10,13,16	Xes No	retention, dense vegetation, comlpex flow path. -diminished by ditching and disturbance
11	🛛 Yes 🗌 No	15	☐ Yes ⊠ No	dense vegetation stabuilizes stream durring minor flooding
12	☐ Yes ⊠ No		Yes No	disturbed wetland, common, no known heritage
13	☐ Yes ⊠ No		Yes No	

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

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14	🛛 Yes 🗌 No	10,11,19	Yes X No	some habitat provided by mix of canopy structire and food sources -limited by adjacnt development on all sids
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SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed., 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					

8						
SECTION 6 - S	TREAM RESO	URCES SUMN	IARY		·	
DESCRIPTION C	DF STREAM: Un	named Perreni	nial	STR	EAM TYPE (ROSGEN)	: E
HAVE FISHERIE	S BEEN DOCUN	IENTED?		DOES THE STREAM SYSTEM APPEAR STABLE?		
OTHER KEY ON	-SITE FUNCTIO	NS OF NOTE: st	tream asseed as	s part	of the wetland syste	em
The following ta the evaluator u number are de	able can be used used to determining fined in Sectior	d to compile dat ine principal fu ו 4.	a on stream resonction and valu	ource e of e	es. "Important Notes" each stream. The fun	' are to include characteristics ctions and values reference
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RAT	RATIONALE		PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	Yes				Yes No	
2	Yes				Yes No	
3	Yes				Yes No	
4	Yes				Yes No	
5	Yes				Yes No	
6	Ves No				Yes No	
7	Yes				Yes No	
8	Yes				Yes No	
9	Ves				Yes No	
10	Yes No				Yes No	
11	Yes No				Yes No	
12	Yes				Yes No	

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13	Yes		Yes No			
14	Yes		Yes No			
SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)						
🔀 Wildlife and	vegetation div	versity/abundance list.				
🔀 Photograph	Photograph of wetland attached.					
Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.						
For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)						





RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)				
ADJACENT LAND USE: golf course				
CONTIGUOUS UNDEVELOPED BUFFER ZO	NE PRESENT? 🗌 Yes 🔀 No			
DISTANCE TO NEAREST ROADWAY OR OT	HER DEVELOPMENT (in feet): 0			
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)				
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249				
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? Xes No			
CONFIRM THAT THE EVALUATION IS BASE	ED ON:			
Office and				
Field examination.				
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):				
🔀 USACE Highway Methodology.				
Other scientifically supported method	(enter name/ title):			

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE	HIGHWAY METHODOLOGY; Env-Wt 311.10)			
WETLAND ID: EA3	LOCATION: (LAT/ LONG) 42.720666/71.428526			
WETLAND AREA: ~7 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Forested			
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND?	COWARDIN CLASS:			
none	PFO1Eb/PEM2Fx/PSS1B			
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM?	IS THE WETLAND PART OF:			
Yes 🛛 No	A wildlife corridor or A habitat island?			
if not, where does the wetland lie in the drainage basin?	IS THE WETLAND HUMAN-MADE?			
low	Yes No			
IS THE WETLAND IN A 100-YEAR FLOODPLAIN?	ARE VERNAL POOLS PRESENT?			
Yes 🔀 No	Yes 🔲 No (If yes, complete the Vernal Pool Table)			
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? Yes No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? Yes No			
PROPOSED WETLAND IMPACT TYPE: Impact Area F Fill	PROPOSED WETLAND IMPACT AREA: 6,850 SF			
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (US	SACE HIGHWAY METHODOLOGY; Env-Wt 311.10)			
 The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values: 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Nutrient Habitat) 				
rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i> . Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i> , "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.				

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ⊠ No		Yes No	extensive alteration, impacted by proximity of golf course
2	☐ Yes ⊠ No		☐ Yes ⊠ No	disturbed wetland
3	☐ Yes ⊠ No		Yes No	permanace of flooding in excavated section is questionble
4	🛛 Yes 🔲 No	4,5,6,7,8,9,11,13,15,18	🛛 Yes 🗌 No	constricted outlet and basin topo provide storage
5	🛛 Yes 🔲 No	10,13	☐ Yes ⊠ No	no apparent inlet, signs of discharge at north end
6	☐ Yes ⊠ No		☐ Yes ⊠ No	no known ES, disturbed
7	🛛 Yes 🔲 No	3,4, 5, 6, 7, 8, 12,13	🔀 Yes 🔲 No	heavy nurtrient input,organic soils, retention, dense vegetation, comlpex flow path.
8	🛛 Yes 🔲 No	1,2,8,12	☐ Yes ⊠ No	forested/and shrub wetland with berry producing shrubs, emergent with wildfower species
9	☐ Yes ⊠ No		Yes No	disturbed wetland with limited viewing oportunity
10	🛛 Yes 🔲 No	1,2,4,5,10,13,16	☐ Yes ⊠ No	retention, dense vegetation, comlpex flow path, limited sources of sediment.
11	☐ Yes ⊠ No		Yes No	not directly assocuted with flowing water
12	☐ Yes ⊠ No		Yes No	disturbed wetland, common, no known heritage
13	☐ Yes ⊠ No		Yes No	none
14	Yes	8,9,10,11,19,20	Yes No	interconneted variety of wetland types including emergent, overland access to open water

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	course		

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed., 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1	3/26/20 4/4/20	Wood Frog 14 egg masses		unknown, currently imopunded by beaver	wetland is floodded by beaver activity, areial photos from past years indicate this is not permanent, area at north end where egg masses were foiund is likely the the vernal pool heavy nutrient and algea
2	-	-	-		
3					
4					
5					
6					

7							
8	-						
SECTION 6 - STREAM RESOURCES SUMMARY							
DESCRIPTION (OF STREAM:			STR	EAM TYPE (ROSGEN)	:	
HAVE FISHERIE	S BEEN DOCUN	/IENTED?			DOES THE STREAM SYSTEM APPEAR STABLE?		
OTHER KEY ON	I-SITE FUNCTIO	NS OF NOTE:					
The following ta the evaluator u number are de	able can be used used to determ fined in Sectior	d to compile dat ine principal fu n 4.	a on stream resonction and valu	ource e of e	es. "Important Notes each stream. The fur	" are to include characteristics actions and values reference	
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RAT	ΓΙΟΝΑLE		PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES	
1	Yes No				Yes No		
2	Yes No				Yes No		
3	Yes No				Yes No		
4	Yes No				Yes		
5	Yes No				Yes No		
6	Yes No				Yes No		
7	Yes No				Yes		
8	Yes No				Yes No		
9	Yes No				Yes No		
10	Yes No				Yes No		

11	Yes		Yes No				
12	Ves No		Yes No				
13	Yes		Yes No				
14	Yes		Yes No				
SECTION 7 - A	SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)						
🛛 Wildlife and	l vegetation div	versity/abundance list.					
🛛 Photograph	Photograph of wetland attached.						
Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.							
For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)							





RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

SECTION 1 - LOCATION (USACE HIGH)	NAY METHODOLOGY)				
ADJACENT LAND USE: golf course					
CONTIGUOUS UNDEVELOPED BUFFER ZO	NE PRESENT? 🗌 Yes 🔀 No				
DISTANCE TO NEAREST ROADWAY OR OT	HER DEVELOPMENT (in feet): 0				
SECTION 2 - DELINEATION (USACE HIG	GHWAY METHODOLOGY; Env-Wt 311.10)				
CERTIFIED WETLAND SCIENTIST (if in a nor prepared this assessment: Brendan Quigle	CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249				
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? Xes No				
CONFIRM THAT THE EVALUATION IS BASE	ED ON:				
Office and	Office and				
Field examination.					
METHOD USED FOR FUNCTIONAL ASSESS	MENT (check one and fill in field if "other"):				
🔀 USACE Highway Methodology.					
Other scientifically supported method	(enter name/ title):				

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE	HIGHWAY METHODOLOGY; Env-Wt 311.10)					
WETLAND ID: EA3.1	LOCATION: (LAT/ LONG) 42.720666/71.428526					
WETLAND AREA: ~2 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Maintained wet Lawn					
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND?	COWARDIN CLASS: PEM2BF					
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM?	IS THE WETLAND PART OF: A wildlife corridor or A habitat island?					
if not, where does the wetland lie in the drainage basin? low	IS THE WETLAND HUMAN-MADE?					
IS THE WETLAND IN A 100-YEAR FLOODPLAIN?	ARE VERNAL POOLS PRESENT? Yes Xo (If yes, complete the Vernal Pool Table)					
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? Yes No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? Yes No					
PROPOSED WETLAND IMPACT TYPE: Impact Area 3 & G-J Fill	PROPOSED WETLAND IMPACT AREA: 28,310 SF					
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (US	SACE HIGHWAY METHODOLOGY; Env-Wt 311.10)					
The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values: 1. Ecological Integrity (from RSA 482-A:2, XI)						
2. Educational Potential (from USACE Highway Methodo	ology: Educational/Scientific Value)					
3. Fish & Aquatic Life Habitat (from USACE Highway Me	thodology: Fish & Shellfish Habitat)					
4. Flood Storage (from USACE Highway Methodology: Fl	oodflow Alteration)					
5. Groundwater Recharge (from USACE Highway Metho	Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge)					
6. Noteworthiness (from USACE Highway Methodology:	Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat)					
7. Nutrient Trapping/Retention & Transformation (from	USACE Highway Methodology: Nutrient removal)					
8. Production Export (Nutrient) (from USACE Highway N	1ethodology)					
9. Scenic Quality (from USACE Highway Methodology: V	isual Quality/Aesthetics)					
10. Sediment Trapping (from USACE Highway Methodolo	gy: Sediment /Toxicant Retention)					
Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)						

- 12. Uniqueness/Heritage (from USACE Highway Methodology)
- 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)
- 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat)

First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE *The Highway Methodology Workbook Supplement*. Second, indicate which functions and values are principal (Principal Function/value?" column). As described in *The Highway Methodology Workbook Supplement*, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective".

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the wetland.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ⊠ No		Yes No	maintateined golf course turf, graded and modifired soil profile, no real wetland function or value in current condition.
2	🗌 Yes 🔀 No		Yes No	
3	☐ Yes ⊠ No		Yes No	
4	Yes		Yes No	
5	🛛 Yes 🗌 No	13	🛛 Yes 🗌 No	appears to be a groundwater seep area
6	☐ Yes ⊠ No		Yes No	
7	Yes		☐ Yes ⊠ No	
8	☐ Yes ⊠ No		Yes No	
9	☐ Yes ⊠ No		Yes No	
10	☐ Yes ⊠ No		Yes No	
11	Yes		Yes No	
12	Yes		Yes No	
13	Yes		Yes No	

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of

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14	☐ Yes ⊠ No			Yes	
SECTION	5 - VERNAL F	POOL SUMMARY (E	inv-Wt 311.10)		
Delineation 104.44. To	ns of vernal po assist in the c	ools shall be based o delineation, individua	n the characteristics als may use either o	is listed in the definit f the following refer	ion of "vernal pool" in Env-Wt ences:
• Ide • Th the	entifying and l e USACE <i>Vern</i> e USACE New	Documenting Vernal al Pool Assessment c England District Com	Pools in New Hamp Iraft guidance dated apensatory Mitigatio	shire 3 rd Ed., 2016, p I 9-10-2013 and forr on Guidance.	oublished by NHF&G or n dated 9-6-2016, Appendix L of
All vernal p	ool ID numbe	ers are to be displaye	d and located on th	e wetland delineatio	on of the subject property.
"Importan other vern	t Notes" are to al pools/wetla	o include documente ands.	ed reproductive and	wildlife values, land	Iscape context, and relationship to
Note: For p Pool Asses <i>Guidance</i> .	orojects seekii sment" form	ng federal approval f dated 9-6-2016, App	rom the USACE, ple endix L of the USAC	ase attach a comple E New England Distr	ted copy of The USACE "Vernal rict Compensatory Mitigation
VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1		-		-	
2					
3				-	
4					
5					
6					
7					

8								
SECTION 6 - S	SECTION 6 - STREAM RESOURCES SUMMARY							
DESCRIPTION OF STREAM: STREAM TYPE (ROSGEN):								
HAVE FISHERIES BEEN DOCUMENTED? DOES THE STREAM SYSTEM APPEAR STABLE? Yes No								
OTHER KEY ON	-SITE FUNCTIO	NS OF NOTE:						
The following ta the evaluator u number are de	able can be used ised to determi fined in Sectior	l to compile dat ine principal fu n 4.	a on stream resonction and valu	ource e of e	es. "Important Notes" each stream. The fund	are to include characteristics tions and values reference		
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RAT	ΓΙΟΝΑLE		PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES		
1	Yes				Yes No			
2	Yes				Yes No			
3	Yes				Yes No			
4	Yes				Yes No			
5	Yes				Yes No			
6	Yes				Yes No			
7	Yes				Yes No			
8	Yes				Yes No			
9	Yes				Yes No			
10	Yes				Yes No			
11	Yes No				Yes No			
12	Yes				Yes No			

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13	Yes		Yes No				
14	Yes		Yes No				
SECTION 7 - A	SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)						
Wildlife and vegetation diversity/abundance list.							
Photograph of wetland attached.							
Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.							
For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)							





RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)			
ADJACENT LAND USE: golf course, comercial development, residential			
CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? Ves Xo			
DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 0			
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)			
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249			
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? Xes No		
CONFIRM THAT THE EVALUATION IS BASED ON:			
Office and			
Field examination.			
METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):			
🔀 USACE Highway Methodology.			
Other scientifically supported method (enter name/ title):			

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)				
WETLAND ID: EA4	LOCATION: (LAT/ LONG) 42.719680/71.424429			
WETLAND AREA: ~8 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Forested			
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND?	COWARDIN CLASS: PFO1B			
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM?	IS THE WETLAND PART OF:			
low	Yes No			
IS THE WETLAND IN A 100-YEAR FLOODPLAIN?	ARE VERNAL POOLS PRESENT? Yes X No (If yes, complete the Vernal Pool Table)			
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? Xes No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? Yes No			
PROPOSED WETLAND IMPACT TYPE: Impact Areas B-E Fill	PROPOSED WETLAND IMPACT AREA: 23,325			
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (US	SACE HIGHWAY METHODOLOGY; Env-Wt 311.10)			
 The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values: 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 13. Wetland-based Recreation (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Secreation) 				
First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i> . Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i> , "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.				

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	Yes		Yes	Intact forested wetkland but adjacvnt to development and golf course
2	☐ Yes ⊠ No		☐ Yes ⊠ No	common forested wetland area
3	☐ Yes ⊠ No		Yes No	no surface water
4	🛛 Yes 🗌 No	5,6,7,9,13,15	🛛 Yes 🗌 No	restricted outlet flat topo and slow flow to Limit Brook
5	🛛 Yes 🗌 No	13	☐ Yes ⊠ No	signs of GW seep
6	☐ Yes ⊠ No		Yes No	no known ES
7	🛛 Yes 🔲 No	3,4, 5, 6, 7, 12,13	🛛 Yes 🗌 No	organic soils, slopw difuse flow, constricted outlet
8	🛛 Yes 🔲 No	1,2,8,12	☐ Yes ⊠ No	forested wetland with mast prodiucing trees and berry producing shrubs
9	☐ Yes ⊠ No		Yes No	common forested wetland
10	🛛 Yes 🔲 No	1,2,3,4,5,9,10,13,14	🔀 Yes 🔲 No	organic soils, slopw difuse flow, constricted outlet
11	☐ Yes ⊠ No		Yes No	no surface directly associated surface water
12	☐ Yes ⊠ No		Yes No	common forested wetland no known heritage
13	☐ Yes ⊠ No		Yes No	
14	Yes	7,8,10	Yes	some habitat provided by forest but not wetland specific

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SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed., 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					
8					

SECTION 6 - STREAM RESOURCES SUMMARY					
DESCRIPTION OF STREAM:			STREAM TYPE (ROSGEN):		
HAVE FISHERIES BEEN DOCUMENTED?			DOES THE STREAM SYSTEM APPEAR STABLE?		
OTHER KEY ON	-SITE FUNCTIO	NS OF NOTE:			
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.					
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES	
1	Yes		Yes No		
2	Yes		Yes No		
3	Yes		Yes No		
4	Yes		Yes No		
5	Yes		Yes No		
6	Yes		Yes No		
7	Yes		Yes No		
8	Ves		Yes No		
9	Yes		Yes No		
10	Ves		Yes No		
11	Yes		Yes No		
12	Yes		Yes No		
13	Yes		Yes No		
14	Yes		Yes No		

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SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

Wildlife and vegetation diversity/abundance list.

Photograph of wetland attached.

Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.

For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)


WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET Water Division/Land Resource Management Wetlands Bureau <u>Check the Status of your Application</u>



RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGH)	SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)					
ADJACENT LAND USE: golf course, residen	tial development					
CONTIGUOUS UNDEVELOPED BUFFER ZO	NE PRESENT? 🗌 Yes 🔀 No					
DISTANCE TO NEAREST ROADWAY OR OT	HER DEVELOPMENT (in feet): 0					
SECTION 2 - DELINEATION (USACE HIG	GHWAY METHODOLOGY; Env-Wt 311.10)					
CERTIFIED WETLAND SCIENTIST (if in a nor prepared this assessment: Brendan Quigle	CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249					
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? Xes No					
CONFIRM THAT THE EVALUATION IS BASE	ED ON:					
Office and						
Field examination.						
METHOD USED FOR FUNCTIONAL ASSESS	MENT (check one and fill in field if "other"):					
🛛 USACE Highway Methodology.						
Other scientifically supported method	(enter name/ title):					

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE I	HIGHWAY METHODOLOGY; Env-Wt 311.10)				
WETLAND ID: EA5	LOCATION: (LAT/ LONG) 42.724385/71.426943				
WETLAND AREA: ~10 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Emergent/Scrub-Shrub/Pond				
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND?	COWARDIN CLASS:				
-					
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM?	IS THE WEILAND PART OF: $\square A$ habitat island?				
Yes X No					
if not, where does the wetland lie in the drainage basin?	IS THE WETLAND HUMAN-MADE?				
	Yes No				
IS THE WETLAND IN A 100-YEAR FLOODPLAIN?	ARE VERNAL POOLS PRESENT?				
Yes 🛛 No	Yes 🛛 No (If yes, complete the Vernal Pool Table)				
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? Xes No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? Yes No				
PROPOSED WETLAND IMPACT TYPE: NO IMPACTS	PROPOSED WETLAND IMPACT AREA:				
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (US	ACE HIGHWAY METHODOLOGY; Env-Wt 311.10)				
 in the "Functions/ Values" column refer to the following functions and values: Ecological Integrity (from RSA 482-A:2, XI) Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) Flood Storage (from USACE Highway Methodology: Floodflow Alteration) Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology) Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 					
11. Shoreline Anchoring (from USACE Highway Methodol	ogy: Sediment/Shoreline Stabilization)				
12. Uniqueness/Heritage (from USACE Highway Methodo	ology)				
13. Wetland-based Recreation (from USACE Highway Methodology: Recreation)					
14. Wetland-dependent Wildlife Habitat (from USACE Hig	shway Methodology: Wildlife Habitat)				
First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i> . Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i> , "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional. and/or national perspective".					

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PRINCIPAL FUNCTIONS/ SUITABILITY RATIONALE FUNCTION/VALUE? **IMPORTANT NOTES** VALUES (Y/N) (Reference #) (Y/N)extensive alteration, impacted by 🛛 Yes Yes 1 excavation, impondment and adj] No 🖂 No development Yes Yes 2 altered wetland 🖂 No 🖂 No supported in Impounded areas 🖂 Yes Yes and possibly in Limit Brook 1,2,4,8,-11 3 No 🛛 No diminished by barriers to connecticvity desnse vegetated areas propvide 🔀 Yes some natiral floodplain, ponds 🔀 Yes 4 4,5,6,7,8,9,11,13,15,16,17,18] No No sprovide storage, comstrited outlet Yes Yes 5 🖂 No 🖂 No Yes Yes 6 no known ES, altered 🖂 No No deeper water areas, dense 🔀 Yes 🔀 Yes 7 2,4,5,6,8,11,13 vegetation,, constricted outlet, No No high nutrient area 🔀 Yes Yes berry producing shrubs, detritis, 1,2,8,11,12 8 🖂 No No transport by stream multiple wetland types able to be viewed, emergent and meadow 🖂 Yes Yes 9 1,2,4,9 🖂 No No vegetation, diminished by golf course landscape retention, deep water areas, 🔀 Yes 🔀 Yes 1,2,3,4,5,10,11,16 10 dense vegetation No No 🔀 Yes Yes dense vegetation stabilizes stream 15 11 No 🖂 No durring minor flooding Yes Yes altered wetland, no known 12 🖂 No No heritage

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

13	☐ Yes ⊠ No			Yes No	none			
14	🔀 Yes 🗌 No	6,7,8,11	,12,19,21	Yes	diversity of wetland types including pond and emergent connected by stream			
SECTION	5 - VERNAL P	OOL SUMMARY (E	inv-Wt 311.10)					
Delineation 104.44. To	Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:							
• Ide • Th the	entifying and L e USACE Vern e USACE New	Documenting Vernal al Pool Assessment o England District Com	Pools in New Hamp Iraft guidance dated apensatory Mitigatio	<i>shire 3rd Ed.</i> , 2016, p 9-10-2013 and forr <i>on Guidance</i> .	oublished by NHF&G or n dated 9-6-2016, Appendix L of			
All vernal p "Important other vern	oool ID numbe t Notes" are to al pools/wetla	ers are to be displaye o include documente ands.	d and located on th d reproductive and	e wetland delineation wildlife values, land	on of the subject property. Iscape context, and relationship to			
Note: For p Pool Asses <i>Guidance</i> .	orojects seekii sment" form	ng federal approval f dated 9-6-2016, App	rom the USACE, ple endix L of the USAC	ase attach a comple E New England Distr	ted copy of The USACE "Vernal ict Compensatory Mitigation			
VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES			
1		-						
2								
3								
4								
5								
6								

7								
8								
SECTION 6 - STREAM RESOURCES SUMMARY								
DESCRIPTION O	DF STREAM: Lin	nit Brook	S	STREAM TYPE (ROSGEN): E				
HAVE FISHERIE	S BEEN DOCUN	IENTED?	د [DOES THE STREAM SYSTEM APPEAR STABLE?				
OTHER KEY ON	-SITE FUNCTIO	NS OF NOTE: st	ream asseed as p	bart	of the wetland syste	em		
The following ta the evaluator u number are de	able can be used used to determ fined in Sectior	l to compile dat ine principal fu n 4.	a on stream resounction and value	of e	s. "Important Notes' ach stream. The fun	" are to include characteristics ctions and values reference		
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RAT	ΓΙΟΝΑLE		PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES		
1	Yes				Yes No			
2	Ves				Yes No			
3	Yes				Yes No			
4	Yes				Yes No			
5	Yes				Yes No			
6	Yes No				Yes No			
7	Yes				Yes No			
8	Yes				Yes No			
9	Yes	I			Yes No			
10	Yes No				Yes No			

11	Yes		Yes No				
12	Ves No		Yes No				
13	Yes		Yes No				
14	Yes		Yes No				
SECTION 7 - A	SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)						
🛛 Wildlife and	l vegetation div	versity/abundance list.					
🛛 Photograph	Photograph of wetland attached.						
Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.							
For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)							



WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET Water Division/Land Resource Management Wetlands Bureau <u>Check the Status of your Application</u>



RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)						
ADJACENT LAND USE: golf course						
CONTIGUOUS UNDEVELOPED BUFFER ZO	NE PRESENT? 🗌 Yes 🔀 No					
DISTANCE TO NEAREST ROADWAY OR OT	HER DEVELOPMENT (in feet): 0					
SECTION 2 - DELINEATION (USACE HIG	GHWAY METHODOLOGY; Env-Wt 311.10)					
CERTIFIED WETLAND SCIENTIST (if in a nor prepared this assessment: Brendan Quigle	n-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who ey, NHCWS #249					
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? Xes No					
CONFIRM THAT THE EVALUATION IS BASE	ED ON:					
Office and	Office and					
Field examination.						
METHOD USED FOR FUNCTIONAL ASSESS	METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in field if "other"):					
🔀 USACE Highway Methodology.						
Other scientifically supported method	(enter name/ title):					

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE H	HIGHWAY METHODOLOGY; Env-Wt 311.10)				
WETLAND ID: EA6	LOCATION: (LAT/ LONG) 42.714301/71.425996				
WETLAND AREA: ~4 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Emergent/Scrub-Shrub/Pond				
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND?	COWARDIN CLASS: PEM1E/PSS1E/PABHxh				
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM?	IS THE WETLAND PART OF:				
if not, where does the wetland lie in the drainage basin? low	IS THE WETLAND HUMAN-MADE?				
IS THE WETLAND IN A 100-YEAR FLOODPLAIN?	ARE VERNAL POOLS PRESENT? Yes No (If yes, complete the Vernal Pool Table)				
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? Yes No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? Yes No				
PROPOSED WETLAND IMPACT TYPE: NO IMPACTS	PROPOSED WETLAND IMPACT AREA:				
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (US	ACE HIGHWAY METHODOLOGY; Env-Wt 311.10)				
 The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values: Ecological Integrity (from RSA 482-A:2, XI) Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) Flood Storage (from USACE Highway Methodology: Floodflow Alteration) Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology) Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) Uniqueness/Heritage (from USACE Highway Methodology: Sediment/Shoreline Stabilization) Wetland-based Recreation (from USACE Highway Methodology) 					
First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i> . Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i> , "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective".					

NHDES-W-06-049

the wetland.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	Yes		☐ Yes ⊠ No	extensive alteration, impacted by excavation, impondment and adj development
2	🗌 Yes 🔀 No		☐ Yes ⊠ No	altered wetland
3	🛛 Yes 🗌 No	1,2,4,8,-11	☐ Yes ⊠ No	supported in Impounded areas and possibly in Limit Brook diminished by barriers to connecticvity
4	🛛 Yes 🔲 No	4,5,6,7,8,9,11,13,15,16,17,18	🛛 Yes 🗌 No	within 100 year floodplain
5	Yes 🔀 No		☐ Yes ⊠ No	
6	☐ Yes ⊠ No		Yes No	no known ES, altered
7	🛛 Yes 🗌 No	2,4,5,6,8,11,13	Xes No	deeper water areas, dense vegetation, constricted outlet, high nutrient area
8	🛛 Yes 🔲 No	1,2,8,11,12	☐ Yes ⊠ No	berry prodicing shrubs, detritis, transoport by stream
9	X Yes	1,2,4,9	☐ Yes ⊠ No	mutple wetkand types able to be viewed, emergent and meadow vegetation, diminished by golf course landscape
10	🔀 Yes 🔲 No	1,2,3,4,5,10,11,16	🛛 Yes 🗌 No	retention, deep water areas, dense vegetation
11	🛛 Yes 🗌 No	15	☐ Yes ⊠ No	dense vegetation stabuilizes stream durring minor flooding
12	☐ Yes ⊠ No		Yes No	altered wetland, no known heritage
13	Yes		Yes No	none

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of

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14

	- 1	
	_	

🛛 Yes

No

6,7,8,11,12,19,21

🗌 Yes 🔀 No diversity of wetland types including pond and emergent connected by stream

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed., 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					

8						
SECTION 6 - S	TREAM RESO	URCES SUMN	IARY		·	
DESCRIPTION C	DF STREAM: Lin	nit Brook		STR	EAM TYPE (ROSGEN)	: E
HAVE FISHERIES BEEN DOCUMENTED? DOES THE STREAM SYSTEM APPEAR STABLE? Yes No						
OTHER KEY ON	-SITE FUNCTIO	NS OF NOTE: st	ream assessed	as pa	art of the wetland sys	tem
The following ta the evaluator u number are de	able can be used used to determi fined in Sectior	l to compile dat ne principal fu n 4.	a on stream resonction and valu	ource e of e	es. "Important Notes" each stream. The fun	' are to include characteristics ctions and values reference
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RAT	ΓΙΟΝΑLE		PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	Yes				Yes No	
2	Yes				Yes No	
3	Yes				Yes No	
4	Ves				Yes No	
5	Yes				Yes No	
6	Yes				Yes No	
7	Yes				Yes No	
8	Yes				Yes No	
9	Yes				Yes No	
10	Yes				Yes No	
11	Yes	I			Yes No	
12	Yes	I			Yes No	

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13	Yes		Yes No					
14	Yes		Yes No					
SECTION 7 - A	SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)							
🔀 Wildlife and	Wildlife and vegetation diversity/abundance list.							
Photograph of wetland attached.								
Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.								
For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)								



WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET Water Division/Land Resource Management Wetlands Bureau <u>Check the Status of your Application</u>



RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)					
ADJACENT LAND USE: golf course					
CONTIGUOUS UNDEVELOPED BUFFER ZO	NE PRESENT? 🗌 Yes 🔀 No				
DISTANCE TO NEAREST ROADWAY OR OT	HER DEVELOPMENT (in feet): 0				
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)					
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249					
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? Xes No				
CONFIRM THAT THE EVALUATION IS BASE	ED ON:				
Office and					
Field examination.					
METHOD USED FOR FUNCTIONAL ASSESS	MENT (check one and fill in field if "other"):				
🔀 USACE Highway Methodology.					
Other scientifically supported method	(enter name/ title):				

WETLAND ID: EA7	LOCATION: (LAT/ LONG) multiple , see plans/					
WETLAND AREA: ~1.5 ac.	DOMINANT WETLAND SYSTEMS PRESENT: Manmade Pond					
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND?	COWARDIN CLASS:					
none	PUBHx					
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM?	IS THE WETLAND PART OF:					
Yes No	A wildlife corridor or 🔀 A habitat island?					
if not, where does the wetland lie in the drainage basin?	IS THE WETLAND HUMAN-MADE?					
	Yes No					
IS THE WETLAND IN A 100-YEAR FLOODPLAIN?	ARE VERNAL POOLS PRESENT?					
Yes 🔀 No	Yes 🔀 No (If yes, complete the Vernal Pool Table)					
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM?	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? Yes No					
PROPOSED WETLAND IMPACT TYPE: Impact Areas 4-6 PROPOSED WETLAND IMPACT AREA: 44,730 SF Fill						
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)						
 The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values: Ecological Integrity (from RSA 482-A:2, XI) Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) Flood Storage (from USACE Highway Methodology: Floodflow Alteration) Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient removal) Production Export (Nutrient) (from USACE Highway Methodology) 						
9. Scenic Quality (from USACE Highway Methodology: V	Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics)					
10. Sediment Trapping (from USACE Highway Methodolo	gy: Sediment /Toxicant Retention)					
1. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization)						
11. Shoreline Anchoring (non USACE righway Methodol	2. Uniqueness/Heritage (from USACE Highway Methodology)					
 Shoreline Anchoring (from USACE Highway Methodol Uniqueness/Heritage (from USACE Highway Methodol 	ology)					
 Shoreline Anchoring (from USACE Highway Methodol Uniqueness/Heritage (from USACE Highway Methodol Wetland-based Recreation (from USACE Highway Methodol 	blogy) thodology: Recreation)					
 Shorenne Anchoring (Horn USACE Highway Methodol Uniqueness/Heritage (from USACE Highway Methodol Wetland-based Recreation (from USACE Highway Methodol Wetland-dependent Wildlife Habitat (from USACE Highway Methodol 	ology) thodology: Recreation) ghway Methodology: Wildlife Habitat)					

are principal (Principal Function/value?" column). As described in *The Highway Methodology Workbook Supplement*, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective".

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the wetland.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	🗌 Yes 🔀 No		Yes No	Manmade ponds in a managed landscape of golf course
2	🗌 Yes 🔀 No		Yes No	golf course water features
3	Yes		Yes Xo	may support fish species but very low quality nutrinet rich, low Ox conditions
4	🗌 Yes 🔀 No		Yes No	no inlet or outlet
5	🛛 Yes 🗌 No	4,15	🛛 Yes 🔲 No	fluctuating wtaer leval, no inlow or outflow
6	☐ Yes ⊠ No		Yes No	golf course water features
7	☐ Yes ⊠ No		Yes No	no inlet
8	☐ Yes ⊠ No		Yes No	very small, maintained edges
9	☐ Yes ⊠ No		Yes No	golf course water features
10	☐ Yes ⊠ No		Yes No	no inlet or outlet
11	☐ Yes ⊠ No		Yes No	no flow or wave action
12	☐ Yes ⊠ No		Yes No	golf course water features
13	☐ Yes ⊠ No		Yes No	golf course water features

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of

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SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed., 2016, published by NHF&G; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

"Important Notes" are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE "Vernal Pool Assessment" form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					
6					
7					

8								
SECTION 6 - S	SECTION 6 - STREAM RESOURCES SUMMARY							
DESCRIPTION C	DESCRIPTION OF STREAM: STREAM TYPE (ROSGEN):							
HAVE FISHERIES BEEN DOCUMENTED? DOES THE STREAM SYSTEM APPEAR STABLE? Yes No								
OTHER KEY ON-SITE FUNCTIONS OF NOTE:								
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.								
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE			PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES		
1	Yes				Yes No			
2	Yes				Yes No			
3	Yes				Yes No			
4	Yes				Yes No			
5	Yes				Yes No			
6	Yes				Yes No			
7	Yes				Yes No			
8	Yes				Yes No			
9	Yes				Yes No			
10	Yes				Yes No			
11	Yes No				Yes No			
12	Yes				Yes No			

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13 Yes Yes Yes No							
14	14 Yes Yes No						
SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)							
Wildlife and vegetation diversity/abundance list.							
Photograph of wetland attached.							
Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.							
For projects Coastal Are	in tidal areas a Worksheet fo	only: additional information requi or more information)	red by Env-Wt 603.03/6	503.04 (please refer to the			



WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET Water Division/Land Resource Management Wetlands Bureau <u>Check the Status of your Application</u>



RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: Hillwood Enterprises, L.P.

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the Coastal Area Worksheet for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the Written Narrative (NHDES-W-06-089) or Avoidance and Minimization Checklist (NHDES-W-06-050) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached with the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)					
ADJACENT LAND USE: golf course					
CONTIGUOUS UNDEVELOPED BUFFER ZO	NE PRESENT? 🗌 Yes 🔀 No				
DISTANCE TO NEAREST ROADWAY OR OT	HER DEVELOPMENT (in feet): 0				
SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)					
CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Brendan Quigley, NHCWS #249					
DATE(S) OF SITE VISIT(S): 3/26/20 to 4/6/20	DELINEATION PER ENV-WT 406 COMPLETED? Xes No				
CONFIRM THAT THE EVALUATION IS BASE	ED ON:				
Office and					
Field examination.					
METHOD USED FOR FUNCTIONAL ASSESS	MENT (check one and fill in field if "other"):				
🔀 USACE Highway Methodology.					
Other scientifically supported method	(enter name/ title):				

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)						
WETLAND ID: EA8	LOCATION: (LAT/ LONG) 42.71944/71435656					
WETLAND AREA: ~250 SF	DOMINANT WETLAND SYSTEMS PRESENT: Manmade basin					
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND?	COWARDIN CLASS:					
none	PEM2Jx					
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM?	IS THE WETLAND PART OF:					
Yes No	A wildlife corridor or A habitat island?					
if not, where does the wetland lie in the drainage basin?	IS THE WETLAND HUMAN-MADE?					
	🖂 Yes 🔲 No					
IS THE WETLAND IN A 100-YEAR FLOODPLAIN?	ARE VERNAL POOLS PRESENT?					
Yes 🖾 No	Yes 🛛 No (If yes, complete the Vernal Pool Table)					
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? Yes No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? Yes No					
PROPOSED WETLAND IMPACT TYPE: NO IMPACT	PROPOSED WETLAND IMPACT AREA:					
SECTION 4 - WETLANDS FUNCTIONS AND VALUES* (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)						
 The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values: Ecological Integrity (from RSA 482-A:2, XI) Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) Flood Storage (from USACE Highway Methodology: Floodflow Alteration) Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology) Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) Uniqueness/Heritage (from USACE Highway Methodology: Sediment/Shoreline Stabilization) Wetland-based Recreation (from USACE Highway Methodology: Sediment) Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Recreation) 						
First, determine if a wetland is suitable for particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i> . Second, indicate which functions and values are principal (Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i> , "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective".						

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ⊠ No		Yes No	Manmade basin in a managed landscape of golf course
2	☐ Yes ⊠ No		Yes No	Manmade basin in a managed landscape of golf course
3	☐ Yes ⊠ No		Yes No	no water
4	☐ Yes ⊠ No		Yes No	no outlet
5	🛛 Yes 🗌 No	3	🔀 Yes 🔲 No	no outlet, drainage dorected to this area infiltrates
6	☐ Yes ⊠ No		Yes No	Manmade basin in a managed landscape of golf course
7	☐ Yes ⊠ No		Yes	no outlet
8	☐ Yes ⊠ No		Yes No	very small, maintained edges
9	☐ Yes ⊠ No		Yes No	Manmade basin in a managed landscape of golf course
10	Xes	1,2,17	🛛 Yes 🗌 No	drainage directed to this basin infittrates, no outlet, sediment is prevented from reaching river -very small, limited function
11	☐ Yes ⊠ No		Yes No	no flow or wave action
12	Yes		Yes No	Manmade basin in a managed landscape of golf course
13	☐ Yes ⊠ No		Yes No	Manmade basin in a managed landscape of golf course

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

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14	☐ Yes ⊠ No			Yes No	Manmade basin in a managed landscape of golf course				
SECTION	SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)								
Delineations of vernal pools shall be based on the characteristics listed in the definition of "vernal pool" in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:									
 Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed., 2016, published by NHF&G or The USACE Vernal Pool Assessment draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District Compensatory Mitigation Guidance 									
All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.									
"Important other vern	t Notes" are to al pools/wetla	o include documente ands.	d reproductive and	wildlife values, land	lscape context, and relationship to				
Note: For p Pool Asses <i>Guidance</i> .	projects seeki sment" form	ng federal approval f dated 9-6-2016, App	rom the USACE, plea endix L of the USAC	ase attach a comple E New England Distr	ted copy of The USACE "Vernal ict Compensatory Mitigation				
VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES				
1		-		-					
2									
3									
4									
5									
6									
7									

8								
SECTION 6 - S	SECTION 6 - STREAM RESOURCES SUMMARY							
DESCRIPTION C	DESCRIPTION OF STREAM: STREAM TYPE (ROSGEN):							
HAVE FISHERIES BEEN DOCUMENTED? DOES THE STREAM SYSTEM APPEAR STABLE? Yes No								
OTHER KEY ON-SITE FUNCTIONS OF NOTE:								
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.								
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE			PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES		
1	Yes				Yes No			
2	Yes				Yes No			
3	Yes				Yes No			
4	Yes				Yes No			
5	Yes				Yes No			
6	Yes				Yes No			
7	Yes				Yes No			
8	Yes				Yes No			
9	Yes				Yes No			
10	Yes				Yes No			
11	Yes No				Yes No			
12	Yes				Yes No			

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13	Yes		Yes No	
14	Yes		Yes No	
SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)				
Wildlife and vegetation diversity/abundance list.				
Photograph of wetland attached.				
Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.				
For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04 (please refer to the Coastal Area Worksheet for more information)				

Appendix A

Wetland evaluation supporting documentation; Reproducible forms.

Below is an example list of considerations that was used for a New Hampshire highway project. Considerations are flexible, based on best professional judgment and interdisciplinary team consensus. This example provides a comprehensive base, however, and may only need slight modifications for use in other projects.



GROUNDWATER RECHARGE/DISCHARGE— This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

CONSIDERATIONS/QUALIFIERS

- 1. Public or private wells occur downstream of the wetland.
- 2. Potential exists for public or private wells downstream of the wetland.
- 3. Wetland is underlain by stratified drift.
- 4. Gravel or sandy soils present in or adjacent to the wetland.
- 5. Fragipan does not occur in the wetland.
- 6. Fragipan, impervious soils, or bedrock does occur in the wetland.
- 7. Wetland is associated with a perennial or intermittent watercourse.
- 8. Signs of groundwater recharge are present or piezometer data demonstrates recharge.
- 9. Wetland is associated with a watercourse but lacks a defined outlet or contains a constricted outlet.
- 10. Wetland contains only an outlet, no inlet.
- 11. Groundwater quality of stratified drift aquifer within or downstream of wetland meets drinking water standards.
- 12. Quality of water associated with the wetland is high.
- 13. Signs of groundwater discharge are present (e.g., springs).
- 14. Water temperature suggests it is a discharge site.
- 15. Wetland shows signs of variable water levels.
- 16. Piezometer data demonstrates discharge.
- 17. Other



FLOODFLOW ALTERATION (Storage & Desynchronization) — This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

CONSIDERATIONS/QUALIFIERS

- 1. Area of this wetland is large relative to its watershed.
- 2. Wetland occurs in the upper portions of its watershed.
- 3. Effective flood storage is small or non-existent upslope of or above the wetland.
- 4. Wetland watershed contains a high percent of impervious surfaces.
- 5. Wetland contains hydric soils which are able to absorb and detain water.
- 6. Wetland exists in a relatively flat area that has flood storage potential.
- 7. Wetland has an intermittent outlet, ponded water, or signs are present of variable water level.
- 8. During flood events, this wetland can retain higher volumes of water than under normal or average rainfall conditions.
- 9. Wetland receives and retains overland or sheet flow runoff from surrounding uplands.
- 10. In the event of a large storm, this wetland may receive and detain excessive flood water from a nearby watercourse.
- 11. Valuable properties, structures, or resources are located in or near the floodplain downstream from the wetland.
- 12. The watershed has a history of economic loss due to flooding.
- 13. This wetland is associated with one or more watercourses.
- 14. This wetland watercourse is sinuous or diffuse.
- 15. This wetland outlet is constricted.
- 16. Channel flow velocity is affected by this wetland.
- 17. Land uses downstream are protected by this wetland.
- 18. This wetland contains a high density of vegetation.
- 19. Other

FISH AND SHELLFISH HABITAT (FRESHWATER) — This function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

CONSIDERATIONS/QUALIFIERS

- 1. Forest land dominant in the watershed above this wetland.
- 2. Abundance of cover objects present.

STOP HERE IF THIS WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE

- 3. Size of this wetland is able to support large fish/shellfish populations.
- 4. Wetland is part of a larger, contiguous watercourse.
- 5. Wetland has sufficient size and depth in open water areas so as not to freeze solid and retain some open water during winter.
- 6. Stream width (bank to bank) is more than 50 feet.
- 7. Quality of the watercourse associated with this wetland is able to support healthy fish/shellfish populations.
- 8. Streamside vegetation provides shade for the watercourse.
- 9. Spawning areas are present (submerged vegetation or gravel beds).
- 10. Food is available to fish/shellfish populations within this wetland.
- 11. Barrier(s) to anadromous fish (such as dams, including beaver dams, waterfalls, road crossing) are absent from the stream reach associated with this wetland.
- 12. Evidence of fish is present.
- 13. Wetland is stocked with fish.
- 14. The watercourse is persistent.
- 15. Man-made streams are absent.
- 16. Water velocities are not too excessive for fish usage.
- 17. Defined stream channel is present.
- 18. Other

Although the above example refers to freshwater wetlands, it can also be adapted for marine ecosystems. The following is an example provided by the National Marine Fisheries Service (NMFS) of an adaptation for the fish and shellfish function.

FISH AND SHELLFISH HABITAT (MARINE) — This function considers the effectiveness of wetlands, embayments, tidal flats, vegetated shallows, and other environments in supporting marine resources such as fish, shellfish, marine mammals, and sea turtles.

CONSIDERATIONS/QUALIFIERS

- 1. Special aquatic sites (tidal marsh, mud flats, eelgrass beds) are present.
- 2. Suitable spawning habitat is present at the site or in the area.
- 3. Commercially or recreationally important species are present or suitable habitat exists.
- 4. The wetland/waterway supports prey for higher trophic level marine organisms.
- 5. The waterway provides migratory habitat for anadromous fish.
- 6. Essential fish habitat, as defined by the 1996 amendments to the Magnuson-Stevens Fishery & Conservation Act, is present (consultation with NMFS may be necessary).
- 7. Other

SEDIMENT/TOXICANT/PATHOGEN RETENTION — This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

CONSIDERATIONS/QUALIFIERS

- 1. Potential sources of excess sediment are in the watershed above the wetland.
- 2. Potential or known sources of toxicants are in the watershed above the wetland.
- 3. Opportunity for sediment trapping by slow moving water or deepwater habitat are present in this wetland.
- 4. Fine grained mineral or organic soils are present.
- 5. Long duration water retention time is present in this wetland.
- 6. Public or private water sources occur downstream.
- 7. The wetland edge is broad and intermittently aerobic.
- 8. The wetland is known to have existed for more than 50 years.
- 9. Drainage ditches have not been constructed in the wetland.

STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.

- 10. Wetland is associated with an intermittent or perennial stream or a lake.
- 11. Channelized flows have visible velocity decreases in the wetland.
- 12. Effective floodwater storage in wetland is occurring. Areas of impounded open water are present.
- 13. No indicators of erosive forces are present. No high water velocities are present.
- 14. Diffuse water flows are present in the wetland.
- 15. Wetland has a high degree of water and vegetation interspersion.
- 16. Dense vegetation provides opportunity for sediment trapping and/or signs of sediment accumulation by dense vegetation is present.
- 17. Other



NUTRIENT REMOVAL/RETENTION/TRANSFORMATION — This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.

- 1. Wetland is large relative to the size of its watershed.
- 2. Deep water or open water habitat exists.
- 3. Overall potential for sediment trapping exists in the wetland.



- 4. Potential sources of excess nutrients are present in the watershed above the wetland.
- 5. Wetland saturated for most of the season. Ponded water is present in the wetland.
- 6. Deep organic/sediment deposits are present.
- 7. Slowly drained fine grained mineral or organic soils are present.
- 8. Dense vegetation is present.
- 9. Emergent vegetation and/or dense woody stems are dominant.
- 10. Opportunity for nutrient attenuation exists.
- 11. Vegetation diversity/abundance sufficient to utilize nutrients.
- STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.
- 12. Waterflow through this wetland is diffuse.
- 13. Water retention/detention time in this wetland is increased by constricted outlet or thick vegetation.
- 14. Water moves slowly through this wetland.
- 15. Other

PRODUCTION EXPORT (Nutrient) — This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

CONSIDERATIONS/QUALIFIERS

- 1. Wildlife food sources grow within this wetland.
- 2. Detritus development is present within this wetland
- 3. Economically or commercially used products found in this wetland.
- 4. Evidence of wildlife use found within this wetland.
- 5. Higher trophic level consumers are utilizing this wetland.
- 6. Fish or shellfish develop or occur in this wetland.
- 7. High vegetation density is present.
- 8. Wetland exhibits high degree of plant community structure/species diversity.
- 9. High aquatic vegetative diversity/abundance is present.
- 10. Nutrients exported in wetland watercourses (permanent outlet present).
- 11. "Flushing" of relatively large amounts of organic plant material occurs from this wetland.
- 12. Wetland contains flowering plants that are used by nectar-gathering insects.
- 13. Indications of export are present.
- 14. High production levels occurring, however, no visible signs of export (assumes export is attenuated).
- 15. Other

SEDIMENT/SHORELINE STABILIZATION — This function considers the effectiveness of a wetland to stabilize streambanks and shorelines against erosion.

- 1. Indications of erosion or siltation are present.
- 2. Topographical gradient is present in wetland.
- 3. Potential sediment sources are present up-slope.
- 4. Potential sediment sources are present upstream.
- 5. No distinct shoreline or bank is evident between the waterbody and the wetland or upland.
- 6. A distinct step between the open waterbody or stream and the adjacent land exists (i.e., sharp bank) with dense roots throughout.
- 7. Wide wetland (>10') borders watercourse, lake, or pond.
- 8. High flow velocities in the wetland.
- 9. The watershed is of sufficient size to produce channelized flow.
- 10. Open water fetch is present.
- 11. Boating activity is present.
- 12. Dense vegetation is bordering watercourse, lake, or pond.
- 13. High percentage of energy-absorbing emergents and/or shrubs border a watercourse, lake, or pond.
- 14. Vegetation is comprised of large trees and shrubs that withstand major flood events or erosive incidents and stabilize the shoreline on a large scale (feet).
- 15. Vegetation is comprised of a dense resilient herbaceous layer that stabilizes sediments and the shoreline on a small scale (inches) during minor flood events or potentially erosive events.
- 16. Other





WILDLIFE HABITAT — This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered. Species lists of observed and potential animals should be included in the wetland assessment report.¹

CONSIDERATIONS/QUALIFIERS

- 1. Wetland is not degraded by human activity.
- 2. Water quality of the watercourse, pond, or lake associated with this wetland meets or exceeds Class A or B standards.
- 3. Wetland is not fragmented by development.
- 4. Upland surrounding this wetland is undeveloped.
- 5. More than 40% of this wetland edge is bordered by upland wildlife habitat (e.g., brushland, woodland, active farmland, or idle land) at least 500 feet in width.
- 6. Wetland is contiguous with other wetland systems connected by a watercourse or lake.
- 7. Wildlife overland access to other wetlands is present.
- 8. Wildlife food sources are within this wetland or are nearby.
- 9. Wetland exhibits a high degree of interspersion of vegetation classes and/or open water.
- 10. Two or more islands or inclusions of upland within the wetland are present.
- 11. Dominant wetland class includes deep or shallow marsh or wooded swamp.
- 12. More than three acres of shallow permanent open water (less than 6.6 feet deep), including streams in or adjacent to wetland, are present.
- 13. Density of the wetland vegetation is high.
- 14. Wetland exhibits a high degree of plant species diversity.
- 15. Wetland exhibits a high degree of diversity in plant community structure (e.g., tree/ shrub/vine/grasses/mosses)
- 16. Plant/animal indicator species are present. (List species for project)
- 17. Animal signs observed (tracks, scats, nesting areas, etc.)
- 18. Seasonal uses vary for wildlife and wetland appears to support varied population diversity/abundance during different seasons.
- 19. Wetland contains or has potential to contain a high population of insects.
- 20. Wetland contains or has potential to contain large amphibian populations.
- 21. Wetland has a high avian utilization or its potential.
- 22. Indications of less disturbance-tolerant species are present.
- 23. Signs of wildlife habitat enhancement are present (birdhouses, nesting boxes, food sources, etc.).
- 24. Other

¹In March 1995, a rapid wildlife habitat assessment method was completed by a University of Massachusetts research team with funding and oversight provided by the New England Transportation Consortium. The method is called WEThings (wetland habitat indicators for non-game species). It produces a list of potential wetland-dependent mammal, reptile, and amphibian species that may be present in the wetland. The output is based on observable habitat characteristics documented on the field data form. This method may be used to generate the wildlife species list recommended as backup information to the wetland evaluation form and to augment the considerations. Use of this method should first be coordinated with the Corps project manager. A computer program is also available to expedite this process. **RECREATION** (Consumptive and Non-Consumptive) — This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals, or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish these resources of the wetland.



CONSIDERATIONS/QUALIFIERS

- 1. Wetland is part of a recreation area, park, forest, or refuge.
- 2. Fishing is available within or from the wetland.
- 3. Hunting is permitted in the wetland.
- 4. Hiking occurs or has potential to occur within the wetland.
- 5. Wetland is a valuable wildlife habitat.
- 6. The watercourse, pond, or lake associated with the wetland is unpolluted.
- 7. High visual/aesthetic quality of this potential recreation site.
- 8. Access to water is available at this potential recreation site for boating, canoeing, or fishing.
- 9. The watercourse associated with this wetland is wide and deep enough to accommodate canoeing and/or non-powered boating.
- 10. Off-road public parking available at the potential recreation site.
- 11. Accessibility and travel ease is present at this site.
- 12. The wetland is within a short drive or safe walk from highly populated public and private areas.
- 13. Other

EDUCATIONAL/SCIENTIFIC VALUE — This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.



- 1. Wetland contains or is known to contain threatened, rare, or endangered species.
- 2. Little or no disturbance is occurring in this wetland.
- 3. Potential educational site contains a diversity of wetland classes which are accessible or potentially accessible.
- 4. Potential educational site is undisturbed and natural.
- 5. Wetland is considered to be a valuable wildlife habitat.
- 6. Wetland is located within a nature preserve or wildlife management area.
- 7. Signs of wildlife habitat enhancement present (bird houses, nesting boxes, food sources, etc.).
- 8. Off-road parking at potential educational site suitable for school bus access in or near wetland.
- 9. Potential educational site is within safe walking distance or a short drive to schools.
- 10. Potential educational site is within safe walking distance to other plant communities.
- 11. Direct access to perennial stream at potential educational site is available.
- 12. Direct access to pond or lake at potential educational site is available.
- 13. No known safety hazards exist within the potential educational site.
- 14. Public access to the potential educational site is controlled.
- 15. Handicap accessibility is available.
- 16. Site is currently used for educational or scientific purposes.
- 17. Other



UNIQUENESS/HERITAGE — This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation, and habitat diversity.

- 1. Upland surrounding wetland is primarily urban.
- 2. Upland surrounding wetland is developing rapidly.
- 3. More than 3 acres of shallow permanent open water (less than 6.6 feet deep), including streams, occur in wetlands.
- 4. Three or more wetland classes are present.
- 5. Deep and/or shallow marsh or wooded swamp dominate.
- 6. High degree of interspersion of vegetation and/or open water occur in this wetland.
- 7. Well-vegetated stream corridor (15 feet on each side of the stream) occurs in this wetland.
- 8. Potential educational site is within a short drive or a safe walk from schools.
- 9. Off-road parking at potential educational site is suitable for school buses.
- 10. No known safety hazards exist within this potential educational site.
- 11. Direct access to perennial stream or lake exists at potential educational site.
- 12. Two or more wetland classes are visible from primary viewing locations.
- 13. Low-growing wetlands (marshes, scrub-shrub, bogs, open water) are visible from primary viewing locations.
- 14. Half an acre of open water or 200 feet of stream is visible from the primary viewing locations.
- 15. Large area of wetland is dominated by flowering plants or plants that turn vibrant colors in different seasons.
- 16. General appearance of the wetland visible from primary viewing locations is unpolluted and/or undisturbed.
- 17. Overall view of the wetland is available from the surrounding upland.
- 18. Quality of the water associated with the wetland is high.
- 19. Opportunities for wildlife observations are available.
- 20. Historical buildings are found within the wetland.
- 21. Presence of pond or pond site and remains of a dam occur within the wetland.
- 22. Wetland is within 50 yards of the nearest perennial watercourse.
- 23. Visible stone or earthen foundations, berms, dams, standing structures, or associated features occur within the wetland.
- 24. Wetland contains critical habitat for a state- or federally-listed threatened or endangered species.
- 25. Wetland is known to be a study site for scientific research.
- 26. Wetland is a natural landmark or recognized by the state natural heritage inventory authority as an exemplary natural community.
- 27. Wetland has local significance because it serves several functional values.
- 28. Wetland has local significance because it has biological, geological, or other features that are locally rare or unique.
- 29. Wetland is known to contain an important archaeological site.
- 30. Wetland is hydrologically connected to a state or federally designated scenic river.
- 31. Wetland is located in an area experiencing a high wetland loss rate.
- 32. Other

VISUAL QUALITY/AESTHETICS — This value considers the visual and aesthetic quality or usefulness of the wetland.



CONSIDERATIONS/QUALIFIERS

- 1. Multiple wetland classes are visible from primary viewing locations.
- 2. Emergent marsh and/or open water are visible from primary viewing locations.
- 3. A diversity of vegetative species is visible from primary viewing locations.
- 4. Wetland is dominated by flowering plants or plants that turn vibrant colors in different seasons.
- 5. Land use surrounding the wetland is undeveloped as seen from primary viewing locations.
- 6. Visible surrounding land use form contrasts with wetland.
- 7. Wetland views absent of trash, debris, and signs of disturbance.
- 8. Wetland is considered to be a valuable wildlife habitat.
- 9. Wetland is easily accessed.
- 10. Low noise level at primary viewing locations.
- 11. Unpleasant odors absent at primary viewing locations.
- 12. Relatively unobstructed sight line exists through wetland.
- 13. Other

ENDANGERED SPECIES HABITAT — This value considers the suitability of the wetland to support threatened or endangered species.



- 1. Wetland contains or is known to contain threatened or endangered species.
- 2. Wetland contains critical habitat for a state or federally listed threatened or endangered species.